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Guidance for the Reregistration of Pesticide Products Containing Dichlorvos (DDVP) as the Active Ingredient

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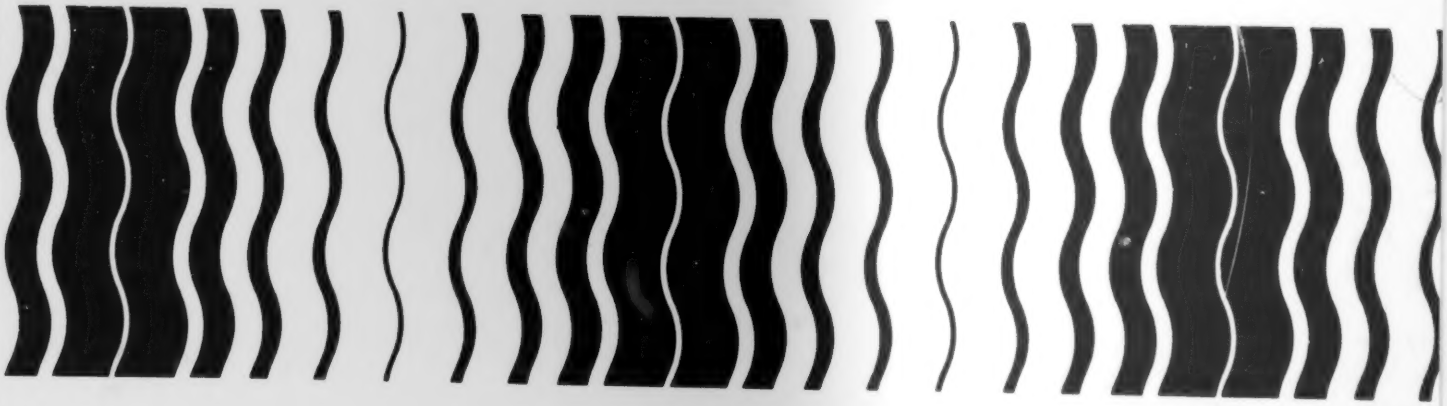

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GUIDANCE FOR THE REREGISTRATION OF PESTICIDE PRODUCTS

CONTAINING

DICHLORVOS

AS THE ACTIVE INGREDIENT

CASE NUMBER 62-73-7

EPA Pesticide Chemical Code (Shaughnessy)
Number 084001

SEPTEMBER, 1987

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

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I. INTRODUCTION

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard.

The Registration Standards program involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA. In its review EPA identifies:

1. Studies that are acceptable to support the data requirements for the currently registered uses of the pesticide.

2. Additional studies necessary to support continued registration. The additional studies may not have been required when the product was initially registered or may be needed to replace studies that are now considered inadequate.

3. Labeling revisions needed to ensure that the product is not misbranded and that the labeling is adequate to protect man and the environment.

The detailed scientific review, which is not contained in this document, but is available upon request[1], focuses on the pesticide active ingredient. The scientific review primarily discusses the Agency's evaluation of and conclusions from available data in its files pertaining to the pesticide active ingredient. However, during the review of these data the Agency is also looking for potential hazards that may be associated with the end use products that contain the active ingredient. The Agency will apply the provisions of this Registration Standard to end use products if necessary to protect man and the environment.

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[1] The scientific reviews may be obtained from the Information Services Section, Program Management and Support Division (TS-757C), EPA, 401 M St., SW, Washington, D.C. 20460.

EPA's reassessment results in the development of a regulatory position, contained in this Registration Standard, on the pesticide and each of its registered uses. See Section IV - Regulatory Position and Rationale. Based on its regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submission of data in support of product registration;

2. Modification of product labels;

3. Modifications to the manufacturing process of the pesticide to reduce the levels of impurities or contaminants;

4. Restriction of the use of the pesticide to certified applicators or other specially trained individuals;

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

Failure to comply with these requirements may result in the issuance of a Notice of Intent to Cancel or a Notice of Intent to Suspend (in the case of failure to submit data).

In addition, in cases in which hazards to man or the environment are identified, the Agency may initiate a special review of the pesticide in accordance with 40 CFR Part 154 to examine in depth the risks and benefits of use of the pesticide. If the Agency determines that the risks of the pesticide's use outweigh the benefits of use, the Agency may propose additional regulatory actions, such as cancellation of uses of the pesticide which have been determined to cause unreasonable adverse effects on the environment.

EPA has authority under the Data Call-In (DCI) provisions of FIFRA sec. 3(c)(2)(B) to require that registrants submit data to answer our questions regarding the chemical, toxicological, and environmental characteristics and fate of a pesticide. This Registration Standard lists the data EPA believes are necessary to resolve our concerns about this pesticide. These data are listed in the Tables A, B, and C in Appendix I. Failure to comply with the DCI requirements enumerated in this Registration Standard may result in issuance by EPA of a Notice of Intent to Suspend the affected product registrations.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. Registrants should notify the Agency of any information, including interim or preliminary results of studies, if those results suggest possible unreasonable adverse effects on man or the environment. This requirement continues as long as the products are registered by the Agency.

II. CHEMICAL COVERED BY THIS STANDARD

A. DESCRIPTION OF CHEMICAL

The following chemical is covered by this Registration Standard:

Common Name: Dichlorvos

Chemical Name: 2,2-dichlorovinyl dimethyl phosphate

Other Chemical Nomenclature: 2,2-dichloroethenyl dimethyl phosphate,

Trade Names: DDVP (USA), DDVF (USSR), Bayer 19 149, Nogos, Vapona, Dedevap, Mafu, Oko, Atgard, No-pest, Herkol, Apavap, Cekusan, Divipan, Phosvit, Benfos, Ciovap, Ravap, Vaponite, Atgard, Canogard, Equigard, Task, and Riton.

CAS Registry Number: 62-73-7

EPA Pesticide Chemical Code (Shaughnessy) Number: 084001

Empirical Formula: $C_4H_7Cl_2O_4P$

Molecular Weight: 221.0

Chemical/Physical Characteristics (technical grade):
Color: colorless to light amber
Physical state: liquid
Specific gravity: 1.42 at 25 °C
Boiling point: 117 °C at 10 mm Hg
Solubility: slightly soluble in water and kerosene; readily soluble in most organic solvents
Vapor pressure: 0.032 mm Hg at 32 °C
Miscibility: miscible with most organic solvents and aerosol propellants
Stability: stable in the presence of hydrocarbon solvents; undergoes hydrolysis in the presence of water and is readily decomposed by strong acids and bases

Corrosion characteristics: corrosive to steel, non-corrosive to stainless steel, aluminum, nickel, Hostelloz 13, Teflon

Chemical relationships: diclorvos is chemically related to the insecticides trichlorfon and naled. Naled degrades to dichlorvos in plants, animals and and soil. In cattle and poultry, naled is debrominated to dichlorvos which further degrades to dichloroacetaldehyde (major pathway) or desmethyl-dichlorvos (minor pathway). Trichlorfon degrades to dichlorvos in soil and alkaline pond water, and possibly in plants and animals.

B. REGULATORY HISTORY

Dichlorvos was first registered for insecticidal use in the United States under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in 1948. It was marketed by the Shell Chemical Company under the trademark Vapona® and protected by U.S. Patent 2,956,073. Technical Shell "Vapona" was registered for pesticide use in 1960, followed by the Shell No-Pest strip in 1963.

A maximum permissable concentration (MPC) of 1.0 mg/m^3 (skin) for an eight-hour day, five-day week has been set by the Threshold Limit Value (TLV) Committee of the American Conference of Governmental Industrial Hygienists.

In 1970, the Shell Chemical Company submitted a Food Additive Petition to the Food and Drug Administration proposing a tolerance of 0.5 ppm for residues of dichlorvos in foods and beverages resulting from dispersion of the pesticide from resin strips when used as an insecticide in areas where foods and beverages are prepared and served. The petitioner later amended the petition by proposing a lower tolerance of 0.1 ppm for residues in daily composite meals (including beverages.) Based on data submitted and other relevant material, the Commissioner of Food and Drugs concluded that the proposed food additive tolerance should not be established, and the petition was withdrawn (35 FR 12680). Subsequently the USDA required that the labels for all uses of the resin strips bear the precautionary statement: "Do not use in kitchens, restaurants or areas where food is prepared or served." In April 1978, the Agency began looking at dichlorvos because scientific studies indicated that it was mutagenic and might cause cancer, nerve damage and birth defects in laboratory animals.

The Agency determined in September 1980, that all pesticide products containing dichlorvos were to be reviewed as possible candidates for the issuance of a Rebuttable Presumption Against Registration (RPAR), now known as the Special Review Process.

The Agency reviewed pertinent data to determine whether any of the risk criteria had been met or exceeded. A discussion of the studies reviewed, their citations, and the Agency's conclusions concerning dichlorvos and the RPAR risk criteria may be found in: "U.S. Environmental Protection Agency, September 30, 1982, Dichlorvos Decision Document." A summary of the conclusions expressed in that document follows:

- The available mutagenicity data on dichlorvos provided extensive evidence that dichlorvos was mutagenic in bacteria. There was also suggestive evidence that dichlorvos was mutagenic in fungi. However, the results of the mammalian studies were inconclusive, necessitating further testing in mammalian systems.

- Four studies on the oncogenic potential of dichlorvos showed no positive evidence of oncogenicity. However, the studies were flawed, requiring additional information. The National Cancer Institute/National Toxicology Program (NCI/NTP) was conducting a bioassay to evaluate the oncogenic potential of dichlorvos, so the registrants were not required to provide additional information.

- There was no definitive evidence suggesting that dichlorvos induced teratogenic or fetotoxic effects in the absence of maternal toxicity. No additional teratogenicity data were required of the registrants.

- Similarly, reproductive effects data revealed no definitive evidence suggesting that dichlorvos had any adverse effect on fertility or other reproductive parameters. No additional reproductive effects data were required of the registrants.

- The available information was sufficient to show that dichlorvos did not produce organophosphate-type delayed neurotoxicity. No additional neurotoxicity data were required of the registrants.

- Based on the above conclusions, the Agency determined that the existing evidence did not support the issuance of an RPAR and that RPARs for trichlorfon and naled as precursers of dichlorvos were also not warranted at that time.

- The Agency decided that it would reassess its regulatory position on dichlorvos when it conducted a registration standard review of dichlorvos. The data generated as a result of the RPAR decision would be evaluated along with the entire data base for dichlorvos, and the need for additional studies in all scientific disciplines would be determined.

As a result of the Agency's scientific investigation of dichlorvos, Data Call-In Notices were issued in March, 1983 which required registrants of dichlorvos products to submit four (4) mutagenicity studies: gene mutation (*in vitro* mammalian cell mutation assay), chromosome aberration (*in vivo* cytogenetics assay), DNA damage/repair (sister chromatid exchange assay, *in vitro* or *in vivo*), and a rodent dominant lethal assay.

The NTP/NCI dichlorvos bioassays on carcinogenicity are completed and show that dichlorvos may pose an oncogenic risk of concern. The draft study and the Agency's conclusions are discussed in Section III-B.

The required mutagenicity studies were submitted to the Agency in 1985. The micronucleus test in the mouse and *in vivo* sister chromatid exchange assay in mice were reviewed and determined to be acceptable. The dominant lethal assay in mice and mouse lymphoma forward mutation assay were determined to be unacceptable and registrants were required to resubmit these studies. These studies have been received, and both have been reviewed and determined to be acceptable (see Section III-B). These studies are supportive of the oncogenic potential of dichlorvos.

C. USE PROFILE

Type of Pesticide: Insecticide

Pests Controlled: Flies, mosquitoes, gnats, cockroaches, and other nuisance insect pests

Registered Uses:

- in and around domestic dwellings (contact, crack and crevice, bait, resin strip, and space spray)
- direct application to domestic food animals (spray, pour-on, dip, back rubber, face oiler, and paint and impregnated material)
- direct application to domestic animals (spray, flea collar, and tag)
- in and around premises housing food and non-food animals (space spray, bait, resin strip, and contact)
- ornamental and food crop greenhouse use (contact and space spray)
- mushroom houses (contact and space spray)
- tobacco warehouses (contact and space spray)
- postharvest tomato treatment (dust applied to fruit in containers)
- sewage plants/sewage systems (resin strips and direct application to sewage)
- aircraft, buses and other commercial transportation vehicles (space spray)
- nonperishable bulk-stored raw agricultural commodities (RACs) including: animal feed, beans [dried type], cocoa beans, coffee beans, grain crops such as corn, nut crops, peanuts, peas [field], soybeans, and tobacco (resin strip and space spray)
- nonperishable packaged or bagged RACs including: beans [dried type], cocoa beans, coffee beans, grain crops such as corn, nut crops, peanuts, peas, and soybeans (space spray)

- nonperishable packaged or bagged processed agricultural commodities including: cereals, crackers, flour, packaged cookies, and sugar (space spray)
- lawns (foliar application)
- ornamental turf (foliar application)
- ornamental plants (foliar and bark application)
- noncrop aquatic areas (ground or air equipment and resin strip)
- eating establishments, and food processing and storage areas (space spray, contact and bait)
- other commercial, institutional and industrial areas (space spray, contact, bait, and resin strip)
- enclosed outdoor utility equipment (space treatment)
- gypsy moth traps and malaise traps (resin strip)
- figs (ground and air equipment)
- urban and rural outdoor areas (food and nonfood) including: enclosed utility equipment, screwworm adult suppression and recreational areas (spray, bait, and resin strip)
- miscellaneous sites including: Epcot display crops, rat receptacle bags, and refuse and solid waste containers and sites (spray, bait, and resin strip)

Methods of Application: Aerosols and fogging equipment; other ground equipment; aircraft; resin strips, pet collars and baits.

Annual Usage: 1.5 to 2.5 million pounds (1980 estimate)

Predominant Usage: Over the past several years, the use of dichlorvos has stabilized. Agricultural applications represent 60 percent of the total annual U.S. usage: 35% is used on beef and dairy cattle, swine and livestock buildings and 25% is used on sheep, poultry, other livestock, tobacco, and greenhouse grown food crops including cucumbers, lettuce, mushrooms, radishes, and tomatoes. Commercial, institutional, and industrial uses account for 25 percent. This includes areas of concentrated public health pests (mosquitoes), lawns and ornamentals. Domestic use accounts for 15 percent, and includes use on household pests and pet collars. According to the National Household Pesticide Usage Study 1976 and 1977, the most frequently observed pesticide in a sample of 8,254 of the Nation's households was dichlorvos.

Mode of Activity: Dichlorvos is a contact and stomach poison with fumigant action resulting in cholinesterase inhibition

Formulations: Emulsifiable concentrates, soluble concentrate liquids, granulars, pressurized liquids and dusts, impregnated materials, pellets/tablets, liquids (ready to use), wettable powders and dusts.

Basic Producers: The basic producers of dichlorvos in the United States are Amvac Chemical Corporation, SDS Biotech Corporation, Prentiss Drug and Chemical Company, Kaw Valley, McLaughlin Gormley King Company, Denka Chemia B.V., Kenco Chemical and Manufacturing Corporation, Wesley Industries, Inc., Fermenta Animal Health, and E.I. du Pont de Nemours and Company.

Number of Registrants: 211

End-use Registrations: The Agency has currently issued 885 registrations. Of this total, 94 products are formulation intermediates and 13 are technical products. There are 24 "special local need" registrations issued under FIFRA section 24(c) and 49 intrastate products.

III. AGENCY FINDINGS

A. SUMMARY

The Agency has reviewed all data currently supporting the registration of dichlorvos. Based on the available data, EPA has reached the following conclusions. The points summarized below are presented in further detail in the context of EPA's science findings and additional data requirements, in Sections B through D.

1. As indicated by the draft NTP study, dichlorvos may pose an oncogenic risk of concern. Dichlorvos is currently classified by EPA as a B_2 "probable human carcinogen" with a Q_1^* value of 2.9×10^{-1} $(mg/kg/day)^{-1}$. The oncogenic risks of concern are for the public from consumption of foods containing residues of dichlorvos, for applicators, for workers reentering treated areas, for residents and occupants of treated areas, for people exposed to pets treated with dichlorvos, and for pets treated with dichlorvos. On September 23, 1987, the Agency's Scientific Advisory Panel considered the oncogenic classification of dichlorvos. The Panel concluded that dichlorvos should be classified as a Group C carcinogen rather than a B_2 carcinogen. EPA is currently reviewing the conclusion of the SAP, and will determine in the near future whether to change the current B_2 classification for dichlorvos.

2. The Agency is also concerned with risks of cholinesterase inhibition and liver effects from subchronic and chronic exposure to dichlorvos by those involved in application, to residents/occupants in treated areas, and to pets. These concerns are based on a two-year dog feeding study with a no observable effect level (NOEL) of 0.08 mg/kg/day (3.2 ppm) for systemic effects of increased liver weights and hepatic cellular enlargement, and a two-year rat inhalation study with a NOEL for cholinesterase inhibition of 0.05 mg/m^3.

3. Technical dichlorvos is a moderately to highly acutely toxic pesticide, which is placed in Toxicity Category I based on the dermal and inhalation route of exposure, and Toxicity Category II for the oral route of exposure. Technical dichlorvos is only mildly irritating to the eyes and skin (Toxicity Category III and IV, respectively). Additional data are required to assess the dermal absorption, dermal sensitization, and acute delayed neurotoxicity potential of dichlorvos in order to meet guideline requirements.

4. Laboratory data show that technical dichlorvos is potentially highly to very highly toxic to birds, freshwater fish and aquatic invertebrates, moderately to highly toxic to estuarine/marine fish, and slightly toxic to very highly toxic to marine invertebrates. Based on theoretical calculations, dichlorvos may pose risks to aquatic invertebrates, fish, and birds, including endangered/threatened species, resulting from

the fig and mosquito (adulticide and larvicide) use patterns. There are, however, no field data or adverse reports to support the finding that significant adverse effects exist for such species. Also, the actual threat to aquatic organisms (including endangered species) cannot be accurately assessed at this time due to the insufficiency of environmental fate data. Acute studies, chronic studies, and environmental residue monitoring data are required by this Standard to enable the Agency to assess the potential risks resulting from these uses.

5. Laboratory data show that technical dichlorvos is highly toxic to honey bees. Because data indicate a high toxicity to bees, residual toxicity data on foliage are required.

6. A tolerance reassessment of dichlorvos is not possible at this time, since the majority of tolerances are not adequately supported, and because there are gaps in the chronic toxicology data base (chronic feeding in rodents, reproduction and teratology). vhe Anticipated Residue Contribution (ARC) for the U.S. population average is calculated to be 0.000416 mg/kg/day. The Theoretical Maximum Residue Contribution (TMRC), which is based on current tolerance levels and an assumption that 100% of the sites are treated, is 0.004302 mg/kg/day. The ARC is a more realistic estimate of dietary exposure than the TMRC because it is based on actual data on processed foods and/or in foods "as eaten". The ARC can be based on residues obtained from actual field studies, from laboratory simulation of processing procedures or market masket surveys. The ARC for dichlorvos is an estimate of dietary exposure assuming residues are present at tolerance levels, but taking into account the estimate of percent site treated and the elimination of some residues during cooking (small grains). The Provisional Acceptable Daily Intake (PADI) is 0.0008 mg/kg/day based on the 2-year dog feeding study. The ARC occupies 52% of the PADI; for children 1 to 6 years of age, the ARC occupies 122% of the PADI.

7. The Agency is unable to assess the potential for dichlorvos to contaminate groundwater. Based on preliminary information, dichlorvos is not expected to contaminate groundwater, because it degrades fairly rapidly in soil and water. However, its environmental fate is largely unknown. Additional data are needed in order for the Agency to assess its fate in the environment and potential for contaminating groundwater.

As a result of the Registration Standard review, the Agency has determined that it may take further regulatory action on dichlorvos due to the oncogenic and non-oncogenic (cholinesterase inhibition and liver effects) characteristics of this chemical. Also, the Agency has determined that additional or revised label restrictions are necessary to remain in compliance with FIFRA. The Agency will shortly announce its decision on any further regulatory action. The label restrictions include:

° Restricted use classification of all products excluding those allowing only domestic uses [household sprays containing 0.5% or less active ingredient], resin strips and pet uses.

- Warning on all products that the chemical causes carcinogenic effects in laboratory animals; causes liver effects in laboratory animals and is a potent cholinesterase inhibitor.

- Protective clothing statements for all products.

- Warning statement on labels with food crop uses (mushrooms, cucumbers, tomatoes and/or lettuce) against applying dichlorvos subsequent to application of naled anf vice versa.

- Fish and wildlife toxicity warnings (including endangered species labeling for products with mosquito larvicide uses).

- Reentry intervals.

The Agency has also identified missing data necessary to fully evaluate the human and environmental risks associated with the use of dichlorvos as an insecticide. These data must be developed in order to maintain registrations of existing products or register any new products containing dichlorvos. A summary of these data gaps is given in Table 1. Please note this is only a summary and complete details can be obtained by referring to the tables in Appendix I.

The Regulatory Position and Rationale section of this Registration Standard discusses the Agency's position on each of the regulatory issues concerning dichlorvos, and the Labeling section contains the wording specified for each of the labeling provisions.

TABLE 1. SUMMARY OF DATA GAPS

(Please refer to the tables in Appendix I for detailed information regarding these requirements)

Toxicology

Dermal sensitization
Dermal absorption
21-day dermal toxicity
Acute delayed neurotoxicity
Subchronic oral toxicity--rodent species
Chronic feeding--rodent species
Teratogenicity--species other than the rabbit
Reproductive effects--rats (2-generation)
Metabolism (low dose, high dose, and multiple dose studies)

Environmental Fate/Exposure

Hydrolysis study
Aerobic soil metabolism study

TABLE 1. SUMMARY OF DATA GAPS (cont'd)

Aerobic and anaerobic aquatic metabolism study
Leaching and adsorption/desorption
Terrestrial field dissipation study
Aquatic (sediment) dissipation study
Photodegradation in soil, water, and air
Volatility (lab) study
Accumulation: irrigated crops
Reentry data
Spray drift data
Dermal and inhalation exposure

[Note: field volatility and long-term field dissipation studies are required via this Standard. The requirement for field volatility depends on the results of the lab volatility data; long-term field dissipation studies will not be required if residues reach 50% dissipation prior to the next recommended application.]

Fish and Wildlife

Acute avian toxicity
Acute toxicity to fish
Acute toxicity to freshwater invertebrates
Acute toxicity to estuarine and marine organisms
Fish early life stage and aquatic invertebrate life cycle
Special residue monitoring studies
Avian reproduction
Fish life cycle study
Honeybee - residual toxicity on foliage

[Other data are required via this Standard depending on the results of lower tiered studies, residue monitoring study and environmental fate studies. These include simulated and actual field testing for both terrestrial and avian species, and aqquatic studies using dichlorvos degradation products.]

Residue Chemistry

Livestock metabolism (direct animal treatment)
Storage stability data
Residue analytical methods
Residue data (except for figs, dried figs, and mushrooms)
Processing and cooking studies
Residue data on stored, unfinished tobacco
Residue data to support use in food areas of food-handling establishments

Product Chemistry

All product chemistry studies

B. HEALTH RISK ASSESSMENT

The Agency has reviewed all available dichlorvos data in the areas of acute toxicity, chronic toxicity, oncogenicity, reproductive effects, mutagenicity, environmental fate and exposure, and ecological effects. Numerous data gaps exist. The following assessment is based on the available data, and is subject to change when the results of the required studies are available for Agency review.

1. Acute Toxicity

With the exception of a requirement for a dermal sensitization study and an acute neurotoxicity study, there are adequate acute toxicity studies on file to support registration of dichlorvos. Technical dichlorvos is moderately to highly toxic on an acute oral, dermal, and inhalation basis. It falls in Toxicity Category II for oral exposure based on acute oral toxicity values of 56 and 80 g/kg in female and male Sherman rats, respectively. It is in Toxicity Category I for acute dermal exposure based on an acute dermal toxicity value of 75 and 107 mg/kg in female and male Sherman rats, respectively; it is also in Toxicity Category I for inhalation exposure based on an acute inhalation toxicity value of >198 mg/m^3 in rats. Technical dichlorvos is only mildly irritating to the eye, based on a lack of corneal injury and causes only mild chemosis at 24 hours postapplication of 1.67 mg/kg in rabbits' eyes, placing it in Toxicity Category III for this route of exposure. Mild dermal irritation was reported in rabbits exposed for 24 hours to doses of 2.90 to 2.98 g/kg placing technical dichlorvos in Toxicity Category IV for this route of exposure. The neurotoxicity studies on dichlorvos have been rereviewed by the Agency on the basis of the Agency's current guidelines, and have been determined to be unacceptable due to design and reporting flaws. An acute delayed neurotoxicity study is required to adequately assess dichlorvos' neurotoxic potential. There is no valid dermal sensitization study on file and therefore this area of toxicity testing also constitutes a data gap.

2. Subchronic Toxicity

A subchronic feeding study in rodents and a 21-day dermal toxicity study in rabbits are required to support registration of dichlorvos products. A subchronic feeding study in dogs has not been submitted to the Agency. However, the Agency is not making this a requirement, since the results from a dog chronic feeding study can be used to satisfy this requirement. Likewise, a 90-day rat inhalation study has not been submitted to the Agency, but the Agency is not making this a requirement, since the results of a chronic inhalation study in rats can be used to satisfy this requirement.

3. Teratology

A rat teratology study is required to support registration of dichlorvos products. In a teratology study, rats and rabbits were exposed to dichlorvos vapor at concentrations of 0.25, 1.25, 2, 4, and 6.25 ug/L, and also to 2 and 4 ug/l in the rabbit. Based on the Agency's current guidelines, the rat data are inadequate to support registration because only 15 animals per group were used. A study is required in a species other than the rabbit. The rabbit data are adequate and demonstrate no teratogenic effects 4 ug/L. The NOEL is 2 ug/L based on decreased fetal weights. Acetylcholinesterase was inhibited at all doses tested.

4. Reproduction

A reproduction study in the rat is required to support registration of dichlorvos products. The available data base contain two reproduction studies, employing the dietary route of administration, one in Yorkshire and Landrace/Hampshire swine and a second in Charles River and Sprague-Dawley rats. In neither study were adverse effects found throughout two or three generations of feeding dichlorvos at levels up to 500 ppm. Based on the Agency's current guidelines, these studies are unacceptable due to poor design and reporting flaws.

5. Metabolism

There are no adequate metabolism studies available for technical dichlorvos. In one study, in which ^{32}P -dichlorvos was administered to rats, 71 to 82 percent of the radioactivity was recovered in the urine and feces within 7 days. In another study, 16 to 23 percent of the administered ^{14}C dichlorvos was found in excreta of rats within 4 days. The metabolites were reported to be desmethyldichlorvos, dichloroacetaldehyde, dichloroethanol, and dechlorinated two-carbon fragments which incorporate into endogenous proteins. These studies do not satisfy the requirements for registration due to reporting deficiencies and design flaws. A study which utilizes a single low dose, a single high dose, and a multiple dose schedule, is required to support registration of dichlorvos products.

6. Mutagenicity

The Agency has again reviewed the available data on the mutagenicity of dichlorvos, including published articles and data submitted in response to the Agency's 1983 Data Call-In (DCI) Notice. Based on a review of this information the Agency has reached the following conclusions:

a. Point Mutation. Based on acceptable studies, dichlorvos is a direct-acting gene mutagen in bacteria, fungi, and mammalian cells *in vitro*. When tested by the conventional assay for gene mutations in Drosophila (sex-linked recessive lethals sampled in the second and third generation after treatment), dichlorvos is negative. When Drosophila were fed over a period of 18 months of time at non-lethal doses, second-chromosome lethals were found in populations sampled in the 30th generation. In a mammalian cell gene mutation study (mouse lymphoma forward mutation assay) conducted in response to the Agency's DCI, positive results (mutant colonies) were reported, both in the presence and absence of metabolic activation, but less under activation conditions. This study satisfies the requirements of the DCI.

b. Chromosomal Damage. Dichlorvos was shown to be negative in micronucleus and sister-chromatid exchange assays conducted in mice, and was also negative in repeated dominant lethal assays.

These studies satisfy the requirements of the DCI, and no further mutagenicity studies are required at this time.

7. Chronic Toxicity

Cholinesterase inhibition and liver effects are significant toxic effects resulting from chronic exposure to dichlorvos. These effects were reported in an acceptable chronic feeding dog study, in which dichlorvos administered in the diet to beagle dogs at 0.1, 1.0, 10.0, 100, and 500 ppm for 2 years. Analysis of the dietary mixture demonstrated a marked loss of dichlorvos. The actual dietary concentrations were 0.09, 0.32, 3.2, and 250 ppm. These doses produced no deaths and no adverse effects on food consumption, body weight, biochemical parameters, brain cholinesterase activity, or terminal body weights. Red blood cell and plasma cholinesterase activity was inhibited at 32 ppm and above, while terminal relative liver weights were significantly increased in males at the same doses. An enlargement of liver cells in both sexes at 32 ppm and above was noted. Based on the increased relative liver weights in males at 32 ppm and above, and enlargement of liver cells in both sexes at 32 ppm and above, the No-Observable Effect Level (NOEL) is 0.08 mg/kg/day (3.2 ppm)[2].

A chronic feeding study in rodents is needed to support registration of dichlorvos products. Results of a two-year rat inhalation study, in which 50/sex Carworth Farms (CFE) rats were exposed to nominal concentrations of 0, 0.05, 0.5, and 5 mg/mm^3 of dichlorvos (mean chamber concentrations were reported to be 4.70, 0.48, and 0.05 mg/mm^3) for two years, indicate that dichlorvos is a potent cholinesterase inhibitor. Cholinesterase activity was significantly decreased in plasma, red blood cell, and brain in the mid and high dose groups. The red blood cell cholinesterase was reduced ($p<0.05$) to 88% of control activity in the low dose females. No compound related changes in acetylcholine or choline content were reported. Based on cholinesterase inhibition, the NOEL is 0.05 mg/m^3. This study cannot be used to fulfill guideline requirements for a chronic feeding study in rodents due to design and reporting flaws, but does demonstrate that dichlorvos is a potent cholinesterase inhibitor.

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[2] The ppm is converted to mg/kg/day by dividing the ppm by a standard conversion factor of 40 to account for the average food intake and weight of an adult dog.

8. Oncogenicity

Based on the Agency's Guidelines for Carcinogen Risk Assessment (51 FR 33992; September 26, 1986), the Agency has classified dichlorvos as a Group B_2 (i.e. probable human carcinogen), with a cancer potency estimate (Q_1^*) of 2.9×10^{-1} $(mg/kg/day)^{-1}$.

The Agency's Guidelines describe the general framework to be used in developing an analysis of carcinogenic risk with regard to assessing the weight of the evidence of carcinogenicity from human and animal studies. Based on the weight-of-evidence analysis of available data, chemicals are characterized as follows with regard to their potential human carcinogenicity. Under EPA's classification system, Group A, "Human Carcinogen", is reserved for those chemicals for which there is sufficient evidence of carcinogenicity from human epidemiological studies. Group B, "Probable Human Carcinogen", is divided into subgroups 1 and 2. Group B_1 requires some human epidemiological evidence, plus evidence from animal studies. Since epidemiological evidence on dichlorvos is lacking, EPA does not have reason to classify the chemical as a Group A or B_1. Chemicals are categorized as Group B_2 carcinogens if there is "sufficient evidence" of the chemical's carcinogenicity from animal studies. Sufficient evidence of carcinogenicity is indicated by an increased incidence of tumors: (a) in multiple species or strains; or (b) in multiple experiments (e.g., with different routes of administration or using different dose levels); or (c) to an unusual degree in a single experiment in regard to high incidence, unusual site or type of tumor, or early age of onset. By comparision, Group C ("Possible Human Carcinogens") chemicals are so classified if there is "limited evidence" from animal studies. There is also a Group D ("Not Classified") and a Group E that is reserved for chemicals shown to be noncarcinogenic in animal/ and/or human studies.

The Agency's decision to classify dichlorvos as a Group B_2 carcinogen is based primarily on a finding of increased incidence of tumors in two species. From the results of the draft NTP study, dichlorvos has been shown to be oncogenic in both Fischer 344 rats and B6C3F1 mice in gavage oncogenicity studies performed at Southern Research Institute, for the National Toxicology Program. Synopses of these studies are provided below.

Mouse Study. Dichlorvos was administered by gavage to B6C3F1 mice 5 days/week for 103 weeks followed by a one week observation period. Dosages used for the main study were determined from a preliminary range-finding study at doses of 0, 5, 10, 20, 40, 80 and 160 mg/kg/day. All males and 9 of the 10 females administered 160 mg/kg/day died prior to the termination of this study. Doses chosen for the main study were 10 and 20 mg/kg/day for male mice and 20 and 40 mg/kg/day for females. These doses were chosen based on the expected cumulative cholinesterase inhibition from the range finding study. Corn oil was used as the vehicle for administering the test substance.

Administration of dichlorvos to female mice was associated with a dose-related trend and statistically significant increase in squamous cell forestomach papillomas and combined squamous cell forestomach papillomas/carcinomas by pairwise comparison at the high dose. In male mice, an increase in squamous cell forestomach papillomas was seen which was associated with a significant dose-related trend. Administration of dichlorvos did not adversely affect survival and did not result in any changes in body weight in the test animals. Plasma cholinesterase values were significantly depressed in treated mice at all time intervals tested during dosing indicating that the studies had been performed at the maximum tolerated dose. An earlier NTP feeding study in B6C3F1 mice had previously been reviewed and found to be inadequate because of design and reporting flaws. However, esophageal lesions were seen in that study which are considered to be related to the forestomach tumors seen in the more recent mouse study.

The Agency considered whether the stomach tumors in mice could be due to irritating effects of dichlorvos on this organ. Since dichlorvos did not demonstrate either excessive primary dermal irritation or eye irritation (Tox. Category IV and III, respectively), it was concluded that the tumors were probably not due to irritating effects of the material.

Rat Study. Dichlorvos was administered by gavage to F344 rats (60/sex/group) once daily five days per week for 103 weeks. Dosages used were 0, 4 and 8 mg/kg/day. These dosages were selected because in the range finding study, all animals receiving higher doses (32 or 64 mg/kg/day) died. One out of 10 males and 4 out of 10 females dies at 16 mg/kg/day. Corn oil was also the vehicle in this study.

Administration of dichlorvos to male rats was associated with a significant increase in pancreatic acinar adenomas and mononuclear cell leukemia by pairwise comparison at both dosage levels which showed a positive dose related trend in all treated male rats. There was also an increased incidence of lung adenomas in high dose male rats which was significant for a trend. Female rats showed a dose-related trend for increased incidences of mammary gland fibroadenoma and mammary gland fibroadenoma/fibroma combined. Administration of dichlorvos did not adversely affect survival or body weight gain in this study. Plasma cholinesterase values were significantly depressed in treated rats at all but the last testing interval. Red blood cell cholinesterase values were also depressed but not as consistently nor to the same degree as plasma.

Three dichlorvos rat oncogenicity studies previously reviewed (an inhalation study using CFE strain rats, a feeding study with CD strain rats, and a feeding study with Osbourne-Mendel rats), were found to be inadequate due to design and reporting flaws. These studies are not included in the Agency's risk assessment of dichlorvos.

Relationship of Dichlorvos With Other Chemicals. With regard to the dichlorvos precursors, naled and trichlorfon, there is no definitive evidence at present that they are oncogenic. Oncogenicity studies were required by the Registration Standards for naled (1983) and trichlorfon (1984). For naled, adequate data have since been submitted; review of this data reveals no evidence of oncogenicity. Oncogenicity data for trichlorfon are not due until March, 1989.

The negative oncogenicity findings for naled contrast sharply with the positive results for dichlorvos, considering that naled is a precursor of, and degrades to, dichlorvos. One possible explanation for the difference in the results of the oncogenicity tests is that, although equivalent doses of both chemicals were employed in the oncognicity studies, animals in the naled studies would not have received the same dichlorvos-equivalents because of the substantial differences in molecular weights, i.e. naled = 381, and dichlorvos = 221. The acute toxicity properties of naled (particularly cholinesterase inhibition) precluded administration of doses higher than employed because the maximum tolerated dose would have been exceeded. Second, neither the rate nor time course of conversion of naled to dichlorvos are presently known. A lower availability of dichlorvos in the naled study as conversion proceeded could account for the negative results in that study. Finally, the two studies used different strains of animals: Sprague-Dawley rats and CD-1 mice in the naled study; F344 rats and B6C3F1 mice in the dichlorvos study. It is not known at present whether there are, or are not, large interstrain differences in rates of conversion/metabolism of naled to dichlorvos.

Dichlorvos is also structurally similar to other organophosphate pesticides such as tetrachlorvinphos, dichloropropene, triallate, akton and phosphamidon in that they all contain a vinyl or vinylidene chloride moiety. Tetrachlorvinphos and triallate were reported to be oncogenic in the mouse, causing an increased incidence of liver tumors. No data were available on either of these chemicals in the rat. Dichloropropene induces forestomach squamous cell tumors in both rats and mice, lung tumors in mice, and hepatic neoplastic nodules in rats. Oncogenicity data are not available on the other pesticides listed above. Vinyl chloride is a human oncogen, causing angiosarcomas of the liver in industrial workers exposed to this chemical (Potential Industrial Carcinogens and Mutagens EPA 560/5-77-005, May 5, 1977, p. 139).

Further Evidence Supporting the B_2 Classification. Further supporting evidence for the B2 classification is provided by positive mutagenicity data. Dichlorvos has been shown to be a direct acting mutagen in such in vitro assay as the Ames Salmonella assay and mouse lymphoma assay; it has also has been reported to alkylate DNA. In addition, a major metabolite of dichlorvos, dichloroacetaldehyde has been reported to be a more potent mutagen in the Ames Salmonella assay than the parent chemical.

Oncogenic Potency

The oncogenic potency (Q_1*) was based on the tumor incidence data in female mice and male rats. The Q_1* in animal units $(mg/kg/day)^{-1}$ was converted to human equivalents by means of interspecies surface area adjustments as recommended by the Agency's Carcinogen Risk Assessment Guidelines to account for the difference in body weight and surface area. This allows application of the carcinogenic potency of dischlorvos for human risk assessment. The Q_1* in human equivalents to be used in the risk assessment was calculated to be 2.9×10^{-1} $(mg/kg/day)^{-1}$ based on the geometric mean of the three Q_1s (stomach x pancreas x leukemia)$^{1/3}$:

Species	Sex	Tumor	$Q_1*(mg/kg/day)^{-1}$ Animal	Human[3] Equivalent
Mouse	F	Stomach, forestomach, papilloma squamous, and squamous cell carcinoma	7.9×10^{-3}	1.1×10^{-1}
Rat	M	Pancreas adenoma	1.1×10^{-1}	5.8×10^{-1}
Rat	M	Leukemia	7.2×10^{-2}	3.8×10^{-1}
Geometric Mean of Q_1* $(mg/kg/day)^{-1}$				2.9×10^{-1}

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[3] The Q_1* for dogs is 1.6×10^{-1} $(mg/kg/day)^{-1}$ and for cats is $9.2 \times 10{-2}$ (mg/kg/day)-1.

RISK ASSESSMENT FOR ONCOGENICITY AND CHRONIC EFFECTS

1. Dietary

Dietary exposure to dichlorvos residues may occur as a result of dichlorvos use in or on a variety of sites. These include use on greenhouse crops, food or feed containers, bulk-stored and packaged nonperishable raw agricultural commodities and packaged or bagged nonperishable processed commodities, commercial food processing plants, groceries, eating establishments, livestock (direct animal treatment), swine feed (as a dewormer) and food in home kitchens from pest strips. Published tolerances (Table 3) exist for residues of dichlorvos in or on raw agricultural and processed products and in meat, milk, poultry, and eggs. The Anticipated Residue Contribution (ARC) is 0.000416 mg/kg/day. This is based on current tolerance levels, cooking data for small grains and an estimate of percent site treated. This ARC was generated by the Tolerance Assessment System (TAS), a computer model based on the dietary intake of 31,000 people over 3 days. The Theoretical Maximum Residue Contribution (TMRC), which is based on current tolerance levels and an assumption that 100% of the sites are treated, is 0.004302 mg/kg/day. The Provisional Acceptable Daily Intake (PADI) was calculated to be 0.0008 mg/kg/day based on a 2-year dog feeding study with a No Observable Effect Level (NOEL) of 0.08 mg/kg/day (3.2 ppm) for changes in liver weight and hepatic cellular enlargement. The Uncertainty Factor applied was 100 in calculating the PADI to account for interspecies biological differences between dogs and humans (NOEL divided by 100 = PADI). The ARC for the U.S. population average occupies 52% of the PADI. For children, 1 to 6 years of age, the ARC occupies 122% of PADI. [the PADI used is the same for both adults and children; children consume more food than adults in relation to body weight.]

Food additive (§409) tolerances have not been established for residues of dichlorvos in or on foods resulting from use of dichlorvos in groceries; eating establishments; and food processing, handling and storage plants. Consequently, the potential dietary exposure due to perishable foods (fruits/vegetables) has not been included in the dietary exposure assessment.

The available data pertaining to metabolism of dichlorvos in plants and livestock (ruminants and poultry) are inadequate; however, the data available pertaining to the metabolism of naled are sufficient to describe the metabolism of dichlorvos, the debrominated metabolite of naled, in plants and in livestock animals following ingestion of feed items bearing residues of dichlorvos. Additional data are required to determine the metabolism of dichlorvos in livestock following direct animal treatment. At the present time, dichlorvos is the sole residue of concern in plants and animals and their products from use of dichlorvos.

The available data regarding the magnitude of residues have been reviewed and it has been determined that there are insufficient data to determine the adequacy of established tolerances for dichlorvos in or on radishes, lettuce, tomatoes, cucumbers and nonperishable bulk and packaged raw and processed agricultural commodities. The limited data indicate that actual residues in plant commodities are approximately the same as established tolerances. Tolerances for residues in or on figs and mushrooms are adequately supported.

Based on a review of available data, the Agency concludes that cooking will likely decrease residues present on the raw agricultural commodity. Studies using samples of rice and wheat flour spiked with dichlorvos showed a 47-fold decrease in residues in cooked rice, and 8 to 13 fold decreases in gravy and biscuits prepared from wheat flour.

The current dietary assessment assumes a significant contribution to the diet from meat and milk (>50%) based upon the assumption that residues will be present at tolerance level and percent site treated data for direct animal treatments. However, based on limited data, no residues of dichlorvos were detected in meat, milk or eggs following direct animal treatments to cattle and poultry. There are no feeding studies currently available to determine residues following ingestion of feed items containing dichlorvos by livestock. Also, no direct animal treatment studies are available for swine. The adequacy of these tolerances cannot be assessed until the required metabolism (direct animal treatment) and residue studies are submitted.

Using the Q_1^* of $2.9 \times 10^{-1} (\text{mg/kg/day})^{-1}$ and the ARC, the dietary oncogenic risk was calculated as follows:

$$\begin{aligned} \text{Risk} &= \text{Exposure} \times Q_1^* \\ &= 0.000416 \text{ mg/kg/day} \times 2.9 \times 10^{-1} (\text{mg/kg/day})^{-1} \\ &= 1.2 \times 10^{-4} \\ &= 10^{-4} \end{aligned}$$

This dietary risk assessment may be underestimated because potential dietary contributions from naled and trichlorfon were not included in the assessment. This may be significant because naled and trichlorfon have many more food uses than dichlorvos.

2. Non-Dietary

Non-dietary exposure to dichlorvos can result from the application of dichlorvos in workplaces and residences. Workers and residents exposed to treated areas and residents exposed to resin (pest) strips and pet flea collars are at risk. Because figs are picked by hand, workers harvesting figs may also be exposed to residues of dichlorvos. Workers applying this insecticide to figs may also be exposed; however, no data are available to quantify this exposure.

No data are available regarding the actual dermal absorption of dichlorvos. For purposes of estimating non-dietary exposure, dermal absorption is calculated to be 75%. This is based on the comparison of oral and dermal LD_{50}s in rats. A dermal absorption study must be submitted to EPA and will be used to refine ths calculation.

The exposure situations are presented below and are tabulated with their oncogenic risk estimates in Table 2. Also listed in Table 2 are the estimated Margins of Safety (MOS) for non-oncogenic liver effects (0.53 to 7619) and anticholinesterase effects (1.8 to 882) resulting from chronic and subchronic exposure (as defined below) to dichlorvos. The exposure estimates are based on studies on dichlorvos and surrogate studies; available knowledge of frequency and patterns of use, and practical protective clothing equipment.

In calculating the MOS's for liver effects and cholinesterase inhibition, the Agency assumed the following:

- Application 6 through 16 times per year was more or less acute exposure in nature.
- Application twice per week for 27 weeks in tobacco warehouses; disinsection of aircraft 52 times per year; and application to tobacco warehouse floors 52 times per year was subchronic exposure.
- Application by pest control applicators to domestic dwellings 220 times per year; exposure to residents after spraying of domestic dwellings; and exposure to residents from resin strips and from pets wearing flea collars was chronic exposure.

The MOS's for chronic exposure were calculated from the one year dog study with a NOEL for systemic effects (increased liver weight and liver hypertrophy) of 0.08 mg/kg/day.

$$\text{MOS for chronic exposure} = \frac{\text{dietary NOEL}}{\text{dermal and inhalation exposure}}$$

The MOS for subchronic exposure was calculated from the two year rat inhalation study with a NOEL (cholinesterase inhibition) of 0.05 mg/m^3.

$$\text{MOS for subchronic exposure} = \frac{\text{inhalation NOEL}}{\text{dermal and inhalation exposure}}$$

a. Occupant Exposure

Spray-treated homes, business establishments or food handling facilities.

If spraying is conducted once per week, the risk to the home resident from inhalation only (dermal exposure unknown) is 10^{-5}; and in business establishments/food handling facilities the risk attributable to inhalation exposure is 10^{-6} to persons occupying these premises.

b. Applicator exposure

1. Hand-held foggers

Workers applying dichlorvos with hand held foggers in mushroom houses have a combined dermal and inhalation risk of 10^{-4}. This assumes that dichlorvos is applied 16 days/year for 40 minutes each day, while wearing gloves, waterproof coveralls and a respirator. Estimates are based on surrogate data. See footnote 5 to Table 2.

Workers applying dichlorvos to greenhouse crops 9 times a year, while wearing gloves, longsleeved shirt, trousers, and a respirator have a combined dermal and inhalation risk of 10^{-3}. When workers are also wearing impervious clothing (coveralls and boots) the risk is 10^{-4}. Estimates are based on surrogate data. See footnotes 6 and 6a to Table 2.

If aircraft personnel are exposed 52 times/year, the risk due to inhalation of dichlorvos during disinsection of the aircraft is 10^{-4}. The assumption is made that no particular protective clothing is worn. These estimates are based on actual dichlorvos data. See footnote 4 to Table 2.

2. Spraying Dairy Barns and Mushroom Houses

Spraying dairy barns with dichlorvos 11 times a year, while wearing gloves, waterproof clothing and respirator results in a combined inhalation and dermal risk of 10^{-3}, based on surrogate data. See footnote 7 to Table 2.

Workers treating mushroom houses with coarse spray 16 days a year, wearing gloves, normal work clothes and a respirator, have a combined risk of 10^{-2}. When impervious protective clothing is added, the risk becomes 10^{-3}. These estimates are also based on surrogate data. See footnotes 8 and 8a to Table 2.

3. Crack and Crevice Treatment in Homes

A Pest Control Operator (PCO) may spray 10 homes once per week for 44 weeks with dichlorvos, and the resident may spray one home once a week for 44 weeks with dichlorvos. Wearing no protective clothing, the combined dermal and inhalation risk to the PCO is 10^{-3}. For a PCO wearing protective clothing, gloves and a respirator, the risk is 10^{-4}. The carcinogenic risk to the home resident is 10^{-5} based on inhalation exposure. These estimates are based on actual dichlorvos data.

4. Sprinkling on Tobacco Warehouse Floors

Assuming that tobacco warehouse floors are sprinkled with dichlorvos solution 54 times a year, with 2 treatments for 27 weeks/year, the applicator risk is 10^{-3} and mixer/loader risk is 10^{-7} due to dermal exposure while the applicator and mixer/loader are wearing protective clothing, gloves and a respirator. It is assumed that wearing a respirator during application affords enough potection such that the inhalation exposure is negligible. Inhalation exposure was below the level of detection. With the addition of impervious clothing (coveralls and boots), the applicator risk and mixer/loader risks are 10^{-3} and 10^{-7}, respectively. The worker reentering the treated facility after 12 hours has a risk of 10^{-2} as a result of inhalation exposure. This assumes that the worker is not wearing a respirator.

5. Thermal aerosol

Assuming that dichlorvos is applied in tobacco warehouses twice a week for 27 weeks, the inhalation risk resulting from reentry after 12 hours is calculated to be 10^{-2}.

c. Resin pest strips in homes

The risk from inhalation exposure to a resident exposed to dichlorvos vapors from a pest strip for 365 days/year is calculated to be 10^{-2}, using an average of actual dichlorvos data ranges. Other assumptions are:

- An average 70 kg resident has a respiratory volume of 1.7 m^3 while performing light tasks and 0.44 m^3 per hour while at rest.
- An average 70 kg resident spends 15 hours per day in the home. Five of these hours are spent performing light tasks and the remaining 10 are spent at rest. The daily respiratory volume is 12.9 m^3 per day.
- Resin strips are changed every 90 days after which a new resin strip is used.

d. Resident exposure to flea collars

Assuming a resident is exposed to dichlorvos vapors from a pet flea collar 9 hours/day which includes 8 hours of casual exposure and 1 hour of close contact with the pet, the risk from inhalation exposure is calculated to be 10^{-4}. This estimate is based on actual dichlorvos data. Dermal exposure is unknown.

e. Dog and cat exposure to flea collars

Assuming that dogs and cats wear flea collars continuously over their lifetime, the carcinogenic risk to dogs is 10^{-2} and the risk to cats is also 10^{-2}.

TABLE 2

DICHLORVOS NON-DIETARY EXPOSURE,[1] ONCOGENIC RISK, NON-ONCOGENIC EFFECTS (MOS)

Uses	Protective Clothing	Protective Resp.	Exposure Dermal (mg/kg/yr)	Exposure Inhalation (mg/kg/yr)	Total LADD [2] (mg/kg/day)	Total Oncogenic Risk	% Site Treated	Non-Oncogenic* Effects (MOS) Liver	Non-Oncogenic* Effects (MOS) ACE**
1. Persons occupying: [3]									
a. Spray treated homes	no	no	no data	0.011	3.01 x 10^{-5}	10^{-5}	No Data Available	2857(I)	7250(I)
b. business establishments [3] or food handling facilities	no	no	no data	0.0084	1.15 x 10^{-5}	10^{-6}	No Data Available	153(I)	390(I)
2. Exposure of Personnel During Disinsection of Aircraft [4]	no	no	no data	0.19	5.20 x 10^{-4}	10^{-4}	<1%	NA (subchronic exposure)	56(I)
3. Workers in Mushroom Houses using hand-held fogger [5]	yes	yes	0.763	0.0011	7.82 x 10^{-4}	10^{-4}	50%	NA (acute exposure)	NA
4. Workers using hand-held fogger for Greenhouse Crops [6]	gloves	yes	3.2	0.000405	3.29 x 10^{-5}	10^{-3}	<1%	NA (acute exposure)	NA
[6a]	yes	yes	1.2	0.000405	1.23 x 10^{-3}	10^{-4}			
5. Workers applying dichlorvos to Dairy Barns [7]	yes	yes	2.6	0.0045	2.68 x 10^{-3}	10^{-3}	No data available	NA (acute exposure)	NA

* Dermal (D) and Inhalation (I), chronic or subchronic exposure.
**Anticholinesterase inhibition

Table 2 (cont'd)

Uses	Protective Clothing	Resp	Exposure		Total LADD (mg/kg/day)	Total Oncogenic Risk	% Site Treated	Non-Oncogenic Effects (MOS)	
			Dermal (mg/kg/yr)	Inhalation (mg/kg/yr)				Liver	ACE
6. Workers treating Mushroom Houses with Coarse Spray [8]	no	yes	26.0	0.011	2.67×10^{-2}	10^{-2}	50%	NA	NA (acute exposure)
[8a]	yes	yes	6.1	0.011	6.49×10^{-3}	10^{-3}			
7. Crack and Crevice Treatment in Homes [9]									
a. Pest Control Operator	no	no	6.6	0.10	6.92×10^{-3}	10^{-3}	Low %	0.7(D) 0.697(D+I)	88.2(I) 1.8(D+I)
[9a]	yes	yes	0.5218	0.00418	5.47×10^{-4}	10^{-4}		8.8(D) 8.8(I+D)	2137(I) 16.8(D+I)
b. Resident [9]	no	no	0.78	0.010	5.03×10^{-5}	10^{-5}	High %	7.1(D) 7.0(D+I)	882(I) 17.6(D+I)
8. Workers Exposed to DDVP Sprinkled on Tobacco Warehouse floors [10]									
a. Application	gloves	yes	10.4	negl	1.07×10^{-2}	10^{-3}	Low %	0.53(D)	1.0(D
[10a]	yes	yes	5.4	negl	5.55×10^{-3}	10^{-3}		1.1(D)	2.0(D
b. Mixer/Loader	gloves	yes	7.28×10^{-4}	negl	7.48×10^{-7}	10^{-7}		7619(D)	19000(D)
[10a]	yes	yes	3.8×10^{-4}	negl	3.9×10^{-7}	10^{-7}		15238(D)	38000(D)

Table 2 (cont'd)

Uses	Protective Clothing	Protective Resp	Exposure Dermal (mg/kg/yr)	Exposure Inhalation (mg/kg/yr)	Total LADD (mg/kg/day)	Total Oncogenic Risk	% Site Treated	Non-Oncogenic Effects (MOS) Liver	Non-Oncogenic Effects (MOS) ACE
c. Reentry Worker	no	no	no data	33	4.52×10^{-2}	10^{-2}		0.27(I)	1.19(I)
9. Workers applying as a Thermal Aerosol in Tobacco Warehouses [11]	no	no	no data	22	3.01×10^{-2}	10^{-2}	< 25%	0.583 (I)	1.48(I)
10. Resin (Pest) Strips in Homes [12]	no	no	no data	9.60	2.63×10^{-2}	10^{-2}	Data Not Available	3.1(I)	3.1(I)
11. Exposure to Resident from Flea Collar [13]	no	no	no data	0.077	2.11×10^{-4}	10^{-4}	Data Not Available	380(I)	380(I)
12. Animals wearing flea collars				mg/kg/day	Q1* $(mg/kg/day)^{-1}$				
a. Dogs				0.053	1.6×10^{-1}	10^{-2}	Data Not Available	1.5	3.8
b. Cats				0.56	9.2×10^{-2}	10^{-2}		1.4	3.6

Table 2 (con't)

FOOTNOTES

1| Jaquith, D. Memo on dichlorvos Exposure dated August 4, 1987.

2| LADD = Lifetime Average Daily Dose. Annualized on the basis of 365 days per year Dermal absorption calculated to be 75% based on the comparison of rat oral and dermal LD_{50}s from a study by Gaines, Thomas B. "Acute Toxicity of Pesticides." Tox. and Appl. Pharm. Vol. 14, No. 3, May, 1969.

3| No data to estimate dermal exposure. Assumes site is sprayed once a week over the lifetime or working lifetime of the individual and that no particular protective clothing is worn.

4| Assume aircraft personnel are exposed 52 times/yr and no particular protective clothing is worn. Estimates based on actual dichlorvos data. No data to estimate dermal exposure.

5| Assume dichlorvos is applied 16 days/yr, 40 min/day, with gloves, waterproof coveralls, and a respirator. Estimates based on surrogate data for chlorpyrifos, fluvalinate, and ethazol.

6| Assume 9 applications/yr with gloves, longsleeved shirt and trousers, and a respirator. Estimates based surrogate data for chlorpyrifos, fluvalinate, and ethazol.

6a| Assumptions same as footnote 8. Add impervious protective clothing (coveralls and boots).

7| Assume dichlorvos sprayed 11 times/yr; gloves, waterproof clothing, and respirator are worn. Estimates based on DDT surrogate data.

8| Assume dichlorvos applied 16 days/yr; normal work clothes and a respirator are worn. Estimates based on DDT surrogate data.

8a| Assumptions same as footnote 11. Add impervious protective clothing (coveralls and boots).

9| Assume PCO or resident sprays dichlorvos once per week for 44 weeks wearing no protective clothing. Estimates based on actual dichlorvos data (the PCO may spray 10 homes and the resident may spray one home).

9a| Assumes application by PCO while wearing protective clothing, gloves and respirator.

Table 2 (con't)

FOOTNOTES (cont'd)

10| Assume treatment 52 times per year - 2 treatments per week for 27 weeks/year, The applicator and mixer/loader wear chemically resistant gloves, respirator, long sleeved shirt, and long pants. Inhalation exposure was below the level of detection. Estimates based on 2,4D surrogate data for applicators and mixors/loaders and on dichlorvos data for reentry workers.

10a| Assumptions are same as footnote 10. Add impervious protective clothing (coveralls and boots.

11| Assume dichlorvos is applied twice a week for 27 weeks; no particular protective clothing is worn. Estimates based on actual dichlorvos data. No data to estimate dermal exposure.

12| Assume resident is exposed to dichlorvos vapors from pest strip 365 days/year. Estimates based on actual dichlorvos data.

13| Assume resident is exposed to dichlorvos vapors from flea collar 9 hours a day: 8 hours casual exposure and 1 hour closer contact with the pet. Estimates based on actual dichlorvos data. No data to estimate dermal exposure.

C. ENVIRONMENTAL PROFILE

1. Ecological Effects

Avian Species. Adequate data are not available to fully assess acute hazards to avian species. Based on data reviewed by the Agency, single-dose oral toxicity values to mallards and pheasants were determined to be 7.78 and 11.3 mg/kg, respectively. These data are not considered adequate due to design and reporting flaws. Based on acceptable subacute dietary studies in birds, technical dichlorvos was reported to have acute toxicity values greater than 1317 and 5000 ppm for mallards at 5 and 16 days of age, respectively. For pheasants, the reported acute toxicity value is 568 ppm. Other available data indicate that the acute toxicity values for upland gamebird species can be as low as 298 ppm. Based on these data, technical dichlorvos is characterized as being highly toxic to very highly toxic to birds on an acute oral exposure basis. On a dietary exposure basis, dichlorvos is moderately toxic to upland species and practically nontoxic to waterfowl (mallards).

The terrestrial non-food and food uses of dichlorvos may pose risks to avian species. Of concern to the Agency are the mosquito larvacide and adulticide uses, and to a lesser degree, the fig use because of its limited use (limited to use in California). Theoretical calculations indicate that these uses of dichlorvos might expose certain avian species to residue levels exceeding risk criteria. Risks to avian species can also be a result of secondary impacts to their food organisms. Residue monitoring and avian reproduction studies are required to enable the Agency to further assess the impact to avian species to determine if further regulatory action is warranted.

Aquatic Species. Sufficient information is available to characterize dichlorvos as highly toxic to both warmwater and coldwater fish, and very highly toxic to aquatic invertebrates. The 96-hour acute toxicity value for freshwater and estuarine/marine fish is reported to be 0.1 ppm (rainbow trout) and 0.23 ppm (striped mullet), respectively. The acute toxicity values for freshwater and estuarine/marine invertebrates is reported to be 0.00007 ppm (Daphnia) and 0.004 ppm (sand shrimp), respectively.

The fig and mosquito larvicide/adulticide uses of dichlorvos may pose risks to fish and aquatic invertebrates. Theoretical calculations indicate that these uses might expose fish and aquatic invertebrates to residue levels exceeding risk criteria. The Agency is requiring additional acute and chronic toxicity studies, including residue monitoring, to allow a further assessment of the impact of dichlorvos uses on the aquatic environment and to determine if further regulatory action is warranted.

Honey Bees. There is sufficient information to characterize dichlorvos as highly toxic to honey bees on an acute toxicity basis (acute toxicity value = 0.495 ug/bee). Because data indicate a high toxicity to bees, additional data are required to fully assess the toxicity to honeybees from the outdoor use patterns. Precautionary labeling is being required for all dichlorvos products intended for outdoor applications.

2. Endangered Species

The Agency has determined that the terrestrial and aquatic use patterns of dichlorvos may present sufficient exposure to pose a toxicity hazard to endangered/threatened terrestrial and aquatic species. Labeling which prohibits the mosquito larvicide use of dichlorvos in the range of endangered and threatened species is required through a PR Notice 87-4 NOTICE TO MANUFACTURERS, FORMULATORS, and REGISTRANTS OF PESTICIDES issued by the Agency in May, 1987 to persons responsible for federal registrations of pesticides registered for forest uses or for control or eradication of mosquito larvae. The Agency is initiating a formal consultation with the Office of Endangered Species (OES) to determine if the fig use may be jeopardizing endangered species. Additional endangered species labeling requirements are reserved pending the results of the consultation with OES.

3. Environmental Fate

The Agency is unable to fully assess the environmental fate of dichlorvos because acceptable data are lacking. Preliminary data indicate that dichlorvos degrades fairly rapidly with half-lives of 2 to 8 hours in soils ranging in texture from sand to silt. Preliminary data also suggest that dichlorvos is intermediately to very mobile in a variety of soils ranging in texture from sandy loam to clay. The mobility of dichlorvos is inversely correlated with soil organic matter content.

To assess the environmental fate of dichlorvos in conjunction with its domestic outdoor use pattern, the Agency is requiring the following studies: hydrolysis; photodegradation studies in soil, water and air; aerobic soil metabolism study; aerobic and anaerobic aquatic metabolism studies; leaching and adsorption desorption; terrestrial field dissipation study; aquatic dissipation study; lab volatility study; accumulation studies in irrigated crops; reentry data (foliar dissipation) and spray drift data. The requirement for field volatility is reserved pending the results of the lab volatility study. Long-term field dissipation studies will not be required if residues reach 50 percent dissipation prior to the next recommended application.

Groundwater contamination may not be a problem because of dichlorvos' rapid degradation. However, acceptable aerobic and anaerobic degradation data, and other environmental fate data, are needed to confirm or reject the preliminary data. When acceptable environmental fate data are received, the Agency will assess the potential for groundwater contamination.

D. REPORTED PESTICIDE INCIDENTS

As part of its assessment of dichlorvos, the Agency reviewed its extensive PIMS data base covering a period from 1964 to December 1980. Only 182 of the 598 dichlorvos incidents could be identified as involving products that contained dichlorvos as the sole active ingredient. A majority (147) of these 182 reports involved humans and domestic animals in the home environment, with 114 incidents resulting from ingestion and application of dichlorvos. One death was reported. Ingestion incidents usually involved children chewing flea collars and "No-Pest" strips. Most of the application incidents involved situations where the existing label precautions were not followed. Of the remaining 416 reports in which dichlorvos was cited in combination with other chemicals, there were nine human fatalities reported.

E. TOLERANCES

1. Tolerances Issued

Tolerances have been established for residues of dichlorvos alone in RACs, in meat, fat, and meat byproducts (refer to 40 CFR 180.235), and in processed food (21 CFR 193.140) as listed below:

TABLE 3

SUMMARY OF TOLERANCES FOR DICHLORVOS
(ppm)

Commodity	U.S.	Canadian	Mexican	Codex MRL
Cattle, fat	0.02	-	-	-
Cattle, meat	0.02	-	-	-
Cattle, meat byproduct	0.02	-	-	-
Cucumbers	0.5	-	-	0.5
Eggs	0.05	-	-	-
Figs	0.1	-	-	-
Figs, dried	0.1	-	-	-
Goats, fat	0.02	-	-	-
Goats, meat	0.02	-	-	-
Goats, meat byproduct	0.02	-	-	-
Horses, fat	0.02	-	-	-
Horses, meat	0.02	-	-	-
Horses, meat byproduct	0.02	-	-	-
Lettuce	1.0	-	-	1.0
Milk	0.02			
Mushrooms	0.5	-	-	-
Poultry, fat	0.05	-	-	-
Poultry, meat	0.05	-	-	-
Poultry, meat byproduct	0.05	-	-	-
Radishes	0.5	-	-	0.5
RACs, nonperishable, bulk stored regardless of fat content (postharvest)	0.5	-	-	-
RACs, nonperishable, packaged or bagged, containing 6 percent fat or less (postharvest)	0.5	-	-	-

SUMMARY OF TOLERANCES FOR DICHLORVOS (cont'd)
(ppm)

Commodity	U.S.	Canadian	Mexican	Codex MRL
RACs, nonperishable, packaged or bagged, containing more than 6 percent fat (postharvest)	2.0	-	-	-
Packaged or bagged nonperishable processed food	0.5	-	-	-
Sheep, fat	0.02	-	-	-
Sheep, meat	0.02	-	-	-
Sheep, meat byproduct	0.02	-	-	-
Swine[4]	0.1	-	-	-
Tomatoes (pre- and postharvest)	0.5	0.25	-	0.5

2. Residue Data

The residue data reviewed in support of the dichlorvos tolerances are as follows:

a. Plants. No data pertaining to metabolism of dichlorvos in plants are available. However, the available data pertaining to the metabolism of naled (1,2-dibromo-2,2-dichloroethyl dimethyl phosphate) in plants are sufficient to describe the metabolism of dichlorvos, the initial, debrominated metabolite of naled.

Naled, applied directly to cotton and cucumber leaves, is metabolized primarily to dichlorvos, which is quickly hydrolyzed (completely within 3 days) to dichloroacetaldehyde. Dichloroacetaldehyde is reduced to dichloroethanol which is then conjugated to form the 2,2-dichloroethanol glucoside and other carbohydrate conjugates (disaccharides and oligosaccharides).

Animals. The available data pertaining to metabolism of dichlorvos in animals are unacceptable. However, the available data pertaining to the metabolism of naled (1,2-dibromo-2,2-dichloroethyl dimethyl phosphate) in animals are sufficient to describe the metabolism of dichlorvos in livestock following ingestion of food containing dichlorvos, since naled breaks down to dichlorvos in animals. Additional data are required regarding the metabolism of dichlorvos in livestock following direct animal treatment. In poultry tissues and eggs, naled is debrominated to dichlorvos, which is either hydrolyzed (major pathway) to dichloroacetaldehyde or O-demethylated (minor pathway) to desmethyl dichlorvos. Dichloroacetaldehyde is reduced to dichloroethanol or dechlorinated to glyoxylic acid. The dichloroethanol is conjugated with endogenous sulfate to form the sulfate ester conjugate of dichloroethanol. The glyoxylic acid is metabolized to glycine, which is incorporated into proteins.

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[4] The tolerance of 0.1 ppm for residues of dichlorvos in the edible tissues of swine covers both its use as an anthelmintic in swine feed (animal drug) (21 CFR 561.180) and as an insecticide applied directly to swine.

The metabolism of naled in ruminants (goats) is similar to that in poultry. Naled is dehalogenated to dichlorvos, which is hydrolyzed, resulting in residual fragments incorporated into amino acids, fatty acids, and sugars.

b. Analytical methodology for determining the levels of residues of dichlorvos in plants and animals is adequate for data collection of residues in plant commodities and in animal tissues and milk. Dichlorvos is not recovered through FDA's multiresidue Protocol I and is only variably recovered through Protocols II and III. The registrant is required to test Protocol IV for its ability to recover residues of dichlorvos from plant and animal commodities.

c. Storage stability data demonstrate that residues of dichlorvos in or on frozen plant samples are stable up to 90 days after application. Residues in or on frozen animal tissues are stable up to 8 weeks after application. Additional storage data on the length of time and conditions under which samples were/are stored are required in order to evaluate the adequacy of the dichlorvos tolerances. If previously submitted samples or newly generated samples were/are stored frozen for greater than 90 days (plants) or 8 weeks (animals), additional storage stability data are required.

d. Data on the magnitude and levels of residues of dichlorvos in radishes, lettuce, tomatoes, and cucumbers are insufficient to determine the adequacy of the established tolerances.

e. Tolerances for residues of dichlorvos in or on figs, dried figs, and mushrooms are adequately supported, pending receipt of the required sample storage data (refer to "c" above).

f. Data are needed to support use of dichlorvos products in food areas of food-handling establishments.

g. Processing and cooking studies are required.

h. Data reflecting the use of dichlorvos on stored, unfinished tobacco are required.

i. Data must be submitted to support the established tolerance for residues of dichlorvos in or on bulk-stored nonperishable RACs (cocoa beans, coffee beans, wheat, corn, nuts, peanuts and soybeans).

j. The established tolerances are adequate to cover residues of dichlorvos in or on packaged or bagged nonperishable RACs and processed food resulting from the application of dichlorvos vapors pending receipt of the required sample storage data. However, supplementary data indicate that residues following use of aerosol treatments will result in tolerance-exceeding residues. Therefore, residue data, and an accompanying tolerance revision must be submitted.

k. The available data regarding residues of dichlorvos in the meat, fat, and meat byproducts of cattle, poultry, milk and eggs following direct application to animals indicate that no measurable residues of dichlorvos will occur. However, metabolism data for direct treatment to livestock are required. No data are available to support continued registration of the direct application to swine. Also, no feeding studies are available regarding the potential for residues occurring in the tissues, milk, and eggs of livestock as a result of ingestion of feed bearing residues of dichlorvos. These are data gaps.

l. Tolerances for residues of dichlorvos per se (40 CFR 180.235), and naled and dichlorvos (40 CFR 180.215) in or on mushrooms, cucumbers, tomatoes, and lettuce are equivalent in magnitude. For this reason, label statements prohibiting the use of naled on crops that have been treated with dichlorvos, and vice versa, are specified by this Standard. It is the position of the Agency that all dichlorvos products must bear this label language in order to be in compliance with FIFRA.

m. The following changes to 40 CFR 180.235 will be proposed:

- The 0.5 ppm tolerance for tomatoes was erroneously printed as 0.05 ppm in the 1984 40 CFR, but will be corrected to read 0.3 ppm (see below).

- The tolerances for residues of dichlorvos in or on mushrooms, tomatoes, cucumbers, and lettuce will be revised to be expressed as dichlorvos *per se* rather than naled, as currently stated. Therefore, the tolerance levels will be reduced as follows: from 1 ppm to 0.6 ppm for lettuce;

from 0.5 ppm to 0.3 ppm for tomatoes, from 0.5 ppm to 0.3 ppm for cucumbers; and from 0.5 ppm to 0.3 ppm for mushrooms.

o 40 CFR 180.3 will be amended by the addition of the statement "Where tolerances are established for residues of both dichlorvos (40 CFR 180.235), and naled and dichlorvos (40 CFR 180.215), in or on the same raw agricultural commodity, the total amount of such pesticides shall not yield more residue than that permitted by the higher of the two tolerances."

[This amendment is necessary because there are tolerances for residues of the combination of naled and dichlorvos (expressed as as naled) in milk, and the fat, meat, and meat by products of cattle, goats, hogs, horses and sheep, as well as tolerances for dichlorvos alone on these commodities.]

° The designation "(N)" for negligible residues listed with the tolerances for milk, eggs, and the fat, meat, and meat by-products of cattle, goats, horses, poultry and sheep will be deleted. The designation "(N)" is no longer used by the Agency.

3. Toxicology

Based on a 2-year dog feeding study with a NOEL of 0.08 mg/kg/day (3.2 ppm) for changes in liver weight and enlarged liver cells, a provisional acceptable daily intake (PADI) of 0.0008 mg/kg/day has been calculated using a one hundred-fold uncertainty factor to account for biological interspecies differences between dogs and man. The calculated estimate is provisional because the existing data base for dichlorvos is lacking a chronic rat feeding study, a reproduction study, and a rat teratology study. The TMRC, wich is based on current tolerance levels and an assumption that 100% of the sites are treated, is 0.004302 mg/kg/day. The Anticipated Residue Contribution (ARC) for dichlorvos for the U.S. population average is 0.000416 mg/kg/day. The ARC is based on current tolerance levels, an estimate of percent site treated, and cooking data for small grains. The ARC occupies 52% of the PADI. For children 1 to 6 years of age, the ARC occupies 122% of the PADI.

As previously discussed under the dietary risk assessment, the assessment assumes a significant contribution to the diet from meat and milk based on the assumption that residues are present at current tolerance levels and taking into account available data on percent site treated for direct animal treatments. However, no residues were detected in meat, milk, or eggs following direct animal treatments. There are no feeding studies available to determine residues following ingestion of feed items containing dichlorvos. The present ARC calculations are based upon an inadequate data base, and thus may be higher or lower in actual practice. When the required residue data, feeding studies and chronic toxicology studies are submitted, the Agency will again evaluate the percentage of the ADI utilized. In the meantime, the Agency will not approve any significant new uses[5] for dichlorvos.

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[5] "Significant new use" is defined in 44 FR 27934, May 11,1979. In the case of a new food or feed use, the Agency will generally consider as significant an increase in the Theoretical Maximum Residue Contribution (TMRC) of greater than 1%.

IV. . REGULATORY POSITIONS AND RATIONALES

A. SUMMARY OF REGULATORY POSITIONS AND RATIONALES

Based on review and evaluation of all available data and other relevant information on dichlorvos the Agency has made the following determinations:

1. The Agency is considering further regulatory action for all registered uses of dichlorvos. The Agency will shortly announce its determination as to whether any further regulatory actions are required for dichlorvos.

Rationale: The Agency is considering further regulatory action for all registered uses of dichlorvos because of concerns about the risks of oncogenicity, cholinesterase inhibition, and liver effects. The oncogenic risks of concern are for the public from consumption of foods containing residues of dichlorvos, for those involved in the application of dichlorvos, for workers reentering treated areas, for residents/occupants of treated areas (including areas treated with resin pest strips or other dichlorvos products), for people exposed to pets treated with dichlorvos, and for pets treated with dichlorvos.

Based on the draft NTP study, the Agency has classified dichlorvos as a Group B2 oncogen (Probable Human Carcinogen), in accordance with the Agency's Guidelines for Carcinogen Risk Assesssment, 51 FR 33992 (Speptember 24, 1986). This determination for oncogenicity is based on a review of two rodent studies conducted for the NTP/NCI in which there were significant increased incidences of forestomach squamous cell carcinoma/-papillomas in female mice and pancreatic acinar adenomas, mononuclear cell leukemia and lung adenomas in male rats and mammary gland fibroadenomas in female rats.

The Agency is also concerned with risks of cholinesterase inhibition and liver effects from subchronic and chronic exposure to dichlorvos by those involved in application, to residents/-occupants of treated areas, and to pets. These conclusions are based on the results of a two-year rat inhalation study with a no observable effect level (NOEL) for cholinesterase inhibition of 0.05 mg/m^3 and a two-year dog feeding study with a NOEL of 0.08 mg/kg/day for systemic effects of increased liver weight and liver hypertrophy.

2. In order to remain in compliance with FIFRA, all dichlorvos products must contain a cancer hazard warning. Specific language is provided in Section IV-D.

Rationale: The Agency believes that incorporation of a cancer hazard warning statement on product labeling affords the product user with important information about the potential oncogenic hazard that is associated with the use of the product. The statement is intended to encourage persons to comply with all directions for use to minimize exposure. The Agency believes that the weight of the evidence identifying dichlorvos as an oncogen, the magnitude of risk (taking into consideration potency and expected exposure levels) and the nature of exposure (non-dietary) supports use of this warning statement on product labels.

3. In order to remain in compliance with FIFRA, all dichlorvos products excluding those allowing only domestic uses [household sprays containing 0.5% or less active ingredient], resin strips, and pet uses must be restricted for retail sale only to Certified Applicators and use by Certified Applicators or persons under their direct supervision. Specific language is provided in Section IV-D of this Standard.

Rationale: Section 3(d)(1)(C) of FIFRA provides that some or all uses of a pesticide will be classified for restricted use if the Administrator determines that without such restriction the pesticide "may generally cause unreasonable adverse effects in man or on the environment." In view of the potential health hazards associated with exposure to dichlorvos, the Agency is concerned about exposures which may result from improper application or use of dichlorvos products, and therefore is classifying certain uses of the pesticide as a restricted use pesticide.

4. The Agency is concerned about the potential hazards to certain non-target aquatic species, but is not considering further regulatory action at this time for fish and wildlife concerns.

Rationale: Based on theoretical calculations, the registered uses on dichlorvos on figs and for mosquito control may result in exposure of certain avian and aquatic organisms to potentially hazardous levels of the pesticide, exceeding the Agency criteria for unacceptable risk. The Agency does not have actual field reports to confirm or deny the potential hazard. Therefore, additional data are needed before the Agency can complete a full assessment of the hazard potential. After the evaluation of required chronic fish and aquatic invertebrate data, and environmental residue monitoring studies, the Agency will determine whether full scale avian and aquatic organism field testing will be required. After receipt of all required data, the Agency will reassess the risk and take the appropriate course of action.

5. In order to remain in compliance with FIFRA, all dichlorvos products must bear fish and wildlife toxicity warnings. Specific language is provided in Section IV-D of this Standard.

Rationale: Labeling requirements are imposed since available data indicate that dichlorvos is potentially highly toxic to very highly toxic to fish, freshwater invertebrates, and avian species.

6. In order to remain in compliance with FIFRA, all dichlorvos product labels must bear endangered species label restrictions in order to protect endangered and threatened species in areas where dichlorvos is applied as a mosquito larvicide. Through a separate PR Notice 87-4, the Agency is requiring endangered species labeling for all end-use dichlorvos products registered with a mosquito larvicide use pattern. In addition, the Agency is initiating consultation with the Office of Endangered Species (OES) to determine if species are being jeopardized in areas in California where dichlorvos is applied to fig trees. Additional labeling modification may be required as a result of this consultation.

Rationale: Dichlorvos is highly toxic to very highly toxic to fish and wildlife. Through a separate PR Notice 87-4, the Agency is requiring a label change to prohibit the use of dichlorvos in aquatic areas where its use has been identified to endanger or jeopardize certain avian and aquatic species.

7. No new tolerances for raw agricultural commodities or significant new uses will be granted until the Agency has received data sufficient to perform a tolerance reassessment.

Rationale: Data gaps exist for animal metabolism, storage stability and residues for the majority of raw and processed agricultural commodities (RAC's). Data gaps also exist in the area of long-term toxicology testing (chronic feeding in rodents, reproduction, and teratology). This lack of data prevents the Agency from conducting a full tolerance assessment. For this reason, new tolerances for RAC's and significant new uses will not be issued until these data gaps have been filled.

8. The Agency will not establish any new food or feed additive regulations pursuant to Section 409 of the Federal Food, Drug, and Cosmetic Act (FFDCA) and is deferring action on previously established food/feed additive regulations.

Rationale: The Delaney Clause in Section 409 of the FFDCA bars the establishment of food/feed additive regulations for substances which induce cancer in man or test animals, with certain exceptions. The Agency is currently developing a position regarding the Delaney Clause and FIFRA. Once this policy has been established, the Agency will determine what action is required for pesticides which have produced oncogenic responses in animals.

9. In order to remain in compliance with FIFRA, all dichlorvos product labels must bear protective clothing statements.

Rationale: Dichlorvos is a potent cholinesterase inhibitor and has been shown to cause adverse liver and oncogenic effects in laboratory animals. To protect workers and other users against these effects, protective clothing is necessary to reduce worker exposure during the mixing, loading, application, disposal, equipment cleaning, and early reentry to treated areas. The precautionary labeling statements provide specific guidance for persons handling dichlorvos and describe the required protective clothing and equipment required for particular handling and early reentry activities.

10. In order to remain in compliance with FIFRA, the Agency is imposing an interim 48-hour reentry interval for all agricultural and commercial uses until such time as appropriate reentry data have been submitted and evaluated and any change in the re-entry interval is announced.

Rationale: Dichlorvos meets the use site toxicology and exposure criteria for requiring reentry protection data (40 CFR 158.140). Until these data are submitted and reviewed, the Agency believes that interim reentry intervals are necessary to reduce exposure of persons entering areas recently treated with dichlorvos products. The risk to persons reentering indoor sites following mist, aerosol or fogging applications is especially great due to the high acute inhalation toxicity of dichlorvos. There is also risk due to dermal inhalation or inhalation exposure from wet sprays and to residues after sprays have dried, if appropriate protective clothing and equipment is not worn. Therefore, the Agency is imposing a 48 hour reentry interval during which treated areas may not be entered unless appropriate protective clothing is worn. For mist, aerosol and fogging applications to indoor sites, adequate ventilation of the treated area must occur before persons may reenter without appropriate respiratory protection. Necessary ventilation times are determined by type of ventilation system and are specified in Section IV-D. of this Standard.

11. The Agency is deferring decisions concerning dichlorvos and groundwater contamination until such time as the information required by the Standard have been submitted and reviewed.

Rationale: Groundwater contamination may not be a potential threat because preliminary data indicate rapid degradation of dichlorvos (half-life of 2 to 8 hours in soil). However, acceptable aerobic and anaerobic degradation data, and other environmental fate data to confirm or reject the preliminary data are needed. When these data have been received and evaluated, the Agency will assess dichlorvos' potential for groundwater contamination and will determine whether further regulatory action is necessary.

12. Pesticide spray drift data requirements are being imposed by this Standard to support the fig and outdoor aerosol and fogging use of dichlorvos. Data required include droplet size spectrum studies and field evaluation of pesticide spray drift.

Rationale: The Agency is concerned about the potential hazards to humans and to nontarget organisms (fish and wildlife, domestic animals) caused by the drift from aerial and ground applications of dichlorvos. The droplet size spectrum study is to be performed to reflect the nozzle and other equipment types to be used in the application of dichlorvos to figs and outdoor aerosols and fogging. The spray drift field evaluation is to be performed to reflect the applicator equipment use pattern, and typical locations of use, which includes different weather factors, in the application of dichlorvos.

13. Status of Registration: While data gaps are being filled, currently registered manufacturing-use products (MPs) and end-use products (EPs) containing dichlorvos may be sold, distributed, formulated and used, subject to the terms and conditions specified in this Standard. However, significant new uses will not be registered. Registrants must provide or agree to develop additional data, as specified in the Data Appendices, in order to maintain existing registrations.

Rationale: Even when authorized under FIFRA sections 3(c)(2)(B) and 3(c)(7) the Agency may elect not to cancel or withhold registration even though data are missing or are inadequate. Issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated, after which the Agency will determine if additional regulatory actions are necessary. The Agency has elected not to consider registration of any significant new uses while data gaps are being filled and data evaluated based on its concern about dichlorvos as explained herein.

14. Priority Review Data: The Agency has identified certain data that will receive priority review when submitted to the Agency.

Rationale: Certain data are needed for further Agency review of this pesticide and its uses. The following studies have been identified to receive priority review as soon as they are received by the Agency:

§158.135 Toxicology

85-2	Dermal absorption Data
81-7	Delayed Neurotoxicity
82-1	Subchronic Feeding - Rodent
82-2	21-Day Dermal Study
83-1	Chronic Toxicity - Rodent
83-3	Teratogenicity - Species other than rabbit
83-4	Reproduction - Rat
85-1	Metabolism

§158.130 Environmental Fate

161-4	Photodegradation in Air
162-1	Aerobic Soil Metabolism

§158.140 Reentry Protection

132-1	Foliar Dissipation
133-4	Inhalation Exposure

§158.142 Spray Drift

201-1	Droplet Size Spectrum
201-1	Drift Field Evaluation

§158.75 Other Exposure Data

	Dermal and Inhalation Exposure

§158.145 Wildlife and Aquatic Organisms

70-1	Residue Monitoring
71-1	Acute Avian Oral Toxicity
71-4	Avian Reproduction
72-1	Acute Toxicity to Freshwater Fish (TEP)
72-2	Acute Toxicity to Freshwater Invertebrates (TEP)
72-3	Acute Toxicity to Estuarine and Marine Organisms
72-4	Fish Early Life Stage and Aquatic Invertebrate Life Cycle
72-5	Fish Life Cycle
	Avian reproduction
141-2	Honeybee - toxicity of residues on foliage

§158.125 Residue Chemistry

Livestock metabolism
Storage stability data
Residue data (except for figs, dried figs, and mushrooms)
Processing and cooking studies

B. CRITERIA FOR REGISTRATION

To be registered or reregistered under this Standard, manufacturing-use products (MPs) must contain dichlorvos as the sole active ingredient (solvents or diluents are not considered to be insecticidal, and therefore, must be declared as inerts). In order to be in compliance with FIFRA, registrants must comply with all terms and conditions described in this section, including submission of an up-to-date Confidential Statement of Formula, submission of revised labeling, commitment to fill data gaps on the schedule specified by the Agency and, when applicable, offer to pay compensation as required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D).

C. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard

Each MP proposed for registration or reregistration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active and intentionally added inert ingredients which are present in the product, as well as impurities found at greater than 0.1 percent.

2. Acute Toxicity Limits

The Agency will consider registration of MPs containing dichlorvos in any Toxicity Category provided the product labeling bears appropriate precautionary statements for the acute toxicity category in which each product is placed.

3. Use Patterns

All MPs must be labeled for formulation into other MP products or into end-use products bearing federally registered uses. Labeling must specify sites, which are listed in Use Patterns, Appendix III. However, no use may be included on the label where the registrant fails to agree to comply with the data requirement in Table A for that use pattern.

D. REQUIRED LABELING

In order to be in compliance with FIFRA, (MPs) and end-use products (EPs) must bear appropriate labeling as specified in 40 CFR 162.10, PR Notices 83-2, 83-3, and 87-4, precautions and warnings listed in the Dichlorvos Use Index (Appendix III), and as indicated in this Registration Standard.

In order to remain in compliance with FIFRA, no EP or MP containing dichlorvos may be released for shipment by a registrant or producer of that product after October 1, 1988, unless the product bears an EPA-approved amended label which complies with this

Registration Standard. In order to remain in compliance with FIFRA, no EP or MP containing EP or MP containing dichlorvos may be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment, or received and (having been so received) delivered or offered to be delivered by any person after October 1, 1989, unless the product bears an EPA-approved amended label which complies with this Registration Standard.

1. Labeling for MPs

In addition to the labeling specified above for all products, in order to remain in compliance with FIFRA, the following information must appear on the labeling:

a. The ingredient statement must declare the active ingredient as:

Dichlorvos [2,2-dichlorovinyl dimethyl phosphate]

b. The following cancer warning statement must appear on the front panel of the label in a prominent position:

"This product may be hazardous to your health. This product contains dichlorvos, which has been determined to cause cancer in laboratory animals. Dichlorvos also causes adverse liver effects in laboratory animals and is a potent cholinesterase inhibitor."

c. The following pesticide disposal statement must appear in the "STORAGE AND DISPOSAL" section of the label: (All MPs assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or is assigned to Toxicity Category I or II on the basis or acute inhalation toxicity):

"PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

(All other MPs not in the above category):

"PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

d. The following identifying phrase must appear directly beneath the product name:

"An insecticide for formulating use only."

e. The following statement must appear in the Directions for Use section of the label:

"Formulators using this product are responsible for obtaining EPA registration of their formulated product."

f. The following worker protective clothing statement must appear in the Directions for Use:

"Persons who handle this product must wear the following protective clothing: protective suit of one or two pieces covering all parts of the body except head, hands, and feet, chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots); NIOSH or MSHA approved respirator; and a chemical-resistant apron."

g. In the Directions for Use, the following statement regarding acceptable use patterns must appear:

"For formulation into end-use insecticide products intended only for (list acceptable sites)."

h. If detailed instructions for formulating are not provided on the label, the following statement must appear:

"Refer to attached Technical Bulletin for formulating and other information."

i. The following fish and wildlife statements are required to appear under the "Environmental Hazards" heading:

"This pesticide is toxic to birds, fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA."

2. Labeling for EPs

In addition to the labeling specified in Section IV-D for all products, in order to remain in compliance with FIFRA the following information must appear on the labeling:

a. The ingredient statement must declare the active ingredient as:

Dichlorvos [2,2-dichlorovinyl dimethyl phosphate]

b. All products excluding those allowing only domestic uses (household sprays containing 0.5% or less active ingredient), resin strips, and pet uses must bear the restricted-use classification and cancer hazard warning statements below:

RESTRICTED USE PESTICIDE

The use of this product may be hazardous to your health. This product contains dichlorvos, which has been determined to cause cancer in laboratory animals. Dichlorvos also causes adverse liver effects in laboratory animals and is a potent cholinesterase inhibitor.

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

c. All products allowing only domestic uses [household sprays containing 0.5% or less active ingredient], resin strips and pet use products must bear the following cancer hazard warning statement on the front panel in a prominent position:

" The use of this product may be hazardous to your health. This product contains dichlorvos, which has been determined to cause cancer in laboratory animals. Dichlorvos also causes adverse liver effects in laboratory animals and is a potent cholinesterase inhibitor."

d. All products allowing outdoor use (excluding strips, traps, and aquatic uses) must bear the following environmental hazards statement:

"This pesticide is toxic to fish, birds, and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, marshes, bogs, and potholes). Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area."

e. All products allowing outdoor use on aquatic sites must bear the following environmental hazards statements:

"This pesticide is toxic to fish, birds, and aquatic invertebrates. Aquatic invertebrates such as shrimp may be killed at recommended application rates. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters. Do not contaminate water by cleaning of equipment or disposal of wastes. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area."

f. All products classified for restricted use must bear the following worker protection statements:

(1) Required for all sites:

"REENTRY:

HANDLE THIS PRODUCT ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT DURING MIXING/LOADING, APPLICATION, REPAIR AND CLEANING OF MIXING, LOADING, AND APPLICATION EQUIPMENT, and DISPOSAL OF THE PESTICIDE: protective suit of one or two pieces covering all parts of the body except head, hands, and feet; chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots), NIOSH or MSHA approved respirator. Mixer/loaders must also wear a chemical-resistant apron. If overhead exposure is likely wear a hood or wide-brimmed hat. Human flaggers must be in totally enclosed vehicles.

IMPORTANT! If pesticide comes in contact with skin, wash off with soap and water and contact a physician immediately. Always wash hands, face, and arms with soap and water before smoking, eating, drinking or toileting.

AFTER WORK: Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Wear only clean clothes when leaving job--do not wear contaminated clothing. Contaminated clothing worn during work must be laundered separately from household clothing. Store protective clothing separately from personal clothing. Clean or launder protective clothing after each use. Clothing and protective equipment heavily contaminated or drenched with dichlorvos must be destroyed according to state and local regulations. Heavily contaminated or drenched clothing cannot be adequately decontaminated.

(2) Optional (in addition to above):

"IF MIXING/LOADING IS PERFORMED USING A CLOSED SYSTEM, THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT MAY BE WORN AS AN ALTERNATIVE: long-sleeved shirt; long-legged pants; chemical resistant gloves; chemical-resistant apron; shoes and socks. All other protective clothing and equipment required for use with open systems must be available nearby."

(3) Required for products allowing fumigant, fog, mist, and aerosol applications to indoor sites (greenhouses, mushroom houses; tobacco and other types of warehouses; commercial, institutional, and industrial establishments; dairy barns):

"Reentry into treated areas is prohibited for 48 hours after the end of treatment, unless the following protective clothing and equipment are worn: protective suit of one or two pieces covering all parts of the body except head, hands, and feet; chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots); NIOSH or MSHA approved respirator. A respirator need not be worn once the site has been thoroughly ventilated, as defined by one of the following: (1) two hours of ventilation using fans or other mechanical ventilation systems; (2) four hours of ventilation using vents, windows or other passive ventilation systems; (3) eleven hours with no ventilation, followed by two hours of passive ventilation; (5) twenty-four hours with no ventilation; or (6) the air concentration of dichlorvos is measured to be 1 mg/m3 or less. All entrances to the treated area must be posted with warning signs beginning at least immediately before application until the reentry interval has expired."

(4) Required for products allowing coarse spray and paint applications to the sites specified above and for all applications to outdoor sites (figs; nursery ornamentals; commercial turf and lawns):

"Reentry into treated areas is prohibited for 48 hours after the end of treatment, unless the following protective clothing and equipment is worn: protective suit of one or two pieces covering all parts of the body except head, hands, and feet, chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots, NIOSH or MSHA approved respirator. If sprays have dried, the respirator need not be worn. The treated area must be posted with warning signs beginning at least immediately before application until the reentry interval has expired."

g. All household sprays containing 0.5% or less active ingredient must bear the following statements:

"Wear chemical resistant gloves, long-sleeved shirt, long-legged pants, shoes and socks when handling the product. Do not allow children or pets to enter treated rooms until thoroughly ventilated, or to contact treated surfaces until sprays have dried."

h. Products allowing use on mushrooms, cucumbers, tomatoes and/or lettuce must bear the following statement:

"To avoid exceeding tolerances do not use naled on crops that have been treated with dichlorvos, or dichlorvos on crops that have been treated with naled."

V. PRODUCTS SUBJECT TO THIS STANDARD

All products containing one or more of the pesticides identified in Section II.A. are subject to certain requirements for data submission or changes in composition, labeling or packaging of the product. The applicable requirements depend on whether the product is a manufacturing or end use product and whether the pesticide is the sole active ingredient or one of multiple active ingredients.

Products are subject to this Registration Standard as follows:

A. Manufacturing use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV, if they pertain to the manufacturing use product.

2. The data requirements listed in Tables A and B[2]

3. The labeling requirements specified for manufacturing use products in Section IV.

4. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

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[2] Data requirements are listed in the three Tables in Appendix I of this Registration Standard. The Guide to Tables in that Appendix explains how to read the Tables.

Table A lists generic data requirements applicable to all products containing the pesticide subject to this Registration Standard. Table B lists product-specific data applicable to manufacturing use products. The data in Tables A and B need not be submitted by a producer who is eligible for the formulator's exemption for that active ingredient.

Table C lists product-specific data applicable to end use products. The Agency has decided that, in most cases, it will not require the submission of product-specific data for end use products at this time. Therefore most Registration Standards do not contain a Table C.

B. Manufacturing use products containing this pesticide as one of multiple active ingredients are subject to:

1. The data requirements listed in Table A.

2. The labeling requirements specified for manufacturing use products in Section IV.

C. End use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV if they pertain to the end use product.

2. If eligible for the formulator's exemption[3], the data requirements listed in Table C.

3. If not eligible for the formulator's exemption, the data requirements listed in Table A and the data requirements listed in Table C.

4. The labeling requirements specified for end use products in Section IV.

D. End use products containing this pesticide as one of multiple active ingredients are subject to:

1. If not eligible for the formulator's exemption, the date requirements listed in Tables A and C.

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[3] If you purchase from another producer and use as the source of your active ingredient only EPA-registered products, you are eligible for the formulator's exemption for generic data concerning that active ingredient (Table A) and product-specific data for the registered manufacturing use product you purchase (Table B).

Two circumstances nullify this exemption:

1) If you change sources of active ingredient to an unregistered product, formulate your own active ingredient, or acquire your active ingredient from a firm with ownership in common with yours, you individually lose the exemption and become subject to the data requirements in Table A.

2) If no producer subject to the generic data requirements in Table A agrees to submit the required data, all end use producers lose the exemption, and become subject to those data requirements.

2. If eligible for the formulator's exemption, the data requirements listed in Table C.

3. The labeling requirements specified for end use products in Section IV.

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[4]

A. What are generic data?

Generic data pertain to the properties or effects of a particular active ingredient. Such data are relevant to an evaluation of all products containing that active ingredient regardless of whether the product contains other ingredients (unless the product bears labeling that would make the data requirement inapplicable).

Generic data may also be data on a "typical formulation" of a product. "Typical formulation" testing is often required for ecological effects studies and applies to all products having that formulation type. These are classed as generic data, and are contained in Table A.

B. Who must submit generic data?

All current registrants are responsible for submitting generic data in response to a data request under FIFRA sec. 3(c)(2)(B) (DCI Notice). EPA has decided, however, not to require a registrant who qualifies for the formulator's exemption (FIFRA sec. 3(c)(2)(D) and § 152.85) to submit generic data in response to a DCI notice if the registrant who supplies the active ingredient in his product is complying with the data request.

If you are granted a generic data exemption, you rely on the efforts of other persons to provide the Agency with the required data. If the registrants who have committed to generate and submit the required data fail to take appropriate steps to meet the requirements or are no longer in compliance with this data requirements notice, the Agency will consider that both they and you are not in compliance and will normally initiate proceedings to suspend the registrations of both your product(s) and their product(s) unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

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[4] Registrations granted after issuance of this Standard will be conditioned upon submission or citation of the data listed in this Registration Standard.

If you are not now eligible for a formulator's exemption, you may qualify for one if you change your source of supply to a registered source that does not share ownership in common with your firm. If you choose to change sources of supply, the Confidential Statement of Formula must identify the new source(s) and you must submit a Formulator's Exemption Statement form.

If you apply for a new registration for products containing this active ingredient after the issuance of this Registration Standard, you will be required to submit or cite generic data relevant to the uses of your product if, at the time the application is submitted, the data have been submitted to the Agency by current registrants. If the required data have not yet been submitted, any new registration will be conditioned upon the new registrant's submission or citation of the required data not later than the date upon which current registrants of similar products are required to provide such data. See FIFRA sec. 3(c)(7)(A). If you thereafter fail to comply with the condition of that registration to provide data, the registration may be cancelled (FIFRA sec. 6(e)).

C. What generic data must be submitted?

You may determine which generic data you must submit by consulting Table A. That table lists the generic data needed to evaluate current uses of all products containing this active ingredient, the uses for which such data are required, and the dates by which the data must be submitted to the Agency.

D. How to comply with DCI requirements.

Within 90 days of your receipt of this Registration Standard, you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1, enclosed) for each of your products. On that form you must state which of the following six methods you will use to comply with the DCI requirements:

1. You will submit the data yourself.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide

EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person who will be submitting the data that you may rely upon its submission. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

If you and other registrants together are generating or submitting requested data as a task force or consortium, a representative of the group should request a Joint Data Submitter Number from the Registration Support and Emergency Response Branch, Registration Division. The request must include the following information:

a. A list of the members of the consortium;
b. The name and address of the designated representative of the consortium, with whom EPA will correspond concerning the data;
c. Identity of the Registration Standard containing the data requirement;
d. A list of the products affected (from all members of the consortium); and
e. Identification of the specific data that the consortium will be generating or submitting.

The Agency will assign a number to the consortium, which should be used on all data submissions by the consortium.

3. You have attempted to enter into an agreement to jointly develop data, but no other registrant has accepted your offer. You request that EPA not suspend your registration for non-compliance with the DCI. EPA has determined that, as a general policy, it will not suspend the registration of a product when the registrant has in good faith sought and continues to seek to enter into a data development/cost sharing program, but the other registrants developing the data have refused to accept its offer. [If your offer is accepted, you may qualify for Option 2 above by entering into an agreement to supply the data.]

In order to qualify for this method, you must:

1. File with EPA a completed "Certification of Attempt to Enter into an Agreement with other Registrants for Development of Data" (EPA Form 8580-6, enclosed).

2. Provide us with a copy of your offer to the other

registrant and proof of the other registrant's receipt of your offer (such as a certified mail receipt). Your offer must, at a minimum, contain the following language or its equivalent:

> [Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec. 3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

The remainder of your offer may not in any way attempt to limit this commitment. If the other registrant to whom your offer is made does not accept your offer, and if the other registrant informs us on a DCI Summary Sheet that he will develop and submit the data required under the DCI, then you may qualify for this option. In order for you to avoid suspension under this method, you may not later withdraw or limit your offer to share in the burden of developing the data.

In addition, the other registrant must fulfill its commitment to develop and submit the data as required by this Notice in a timely manner. If the other registrant fails to develop the data or for some other reason would be subject to suspension, your registration as well as that of the other registrant will normally be subject to initiation of suspension proceedings, unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

4. You request a waiver of the data requirement. If you believe that a data requirement does not (or should not) apply to your product or its uses, you must provide EPA with a statement of the reasons why you believe this is so. Your statement must address the specific composition or use factors that lead you to believe that a requirement does not apply. Since the Agency has carefully considered the composition and uses of pesticide products in determining that a data requirement applies, EPA does not anticipate that many waivers will be granted. A request for waiver does not extend the timeframes for developing required data, and if your waiver request is denied, your registration may be suspended if you fail to submit the data.

5. You request that EPA amend your registration by deleting the uses for which the data are needed. You are not required to submit data for uses which are no longer on your label.

6. You request voluntary cancellation of the registration of your product(s) for which the data are needed.

E. Testing Protocols, Standards for Conducting Acceptable Tests, Guidance on Evaluating and Reporting Data.

All studies required under this Notice must be conducted in accordance with test standards outlined in the Pesticide Assessment Guidelines, unless other protocol or standards are approved for use by the Agency in writing.

As noted herein, these EPA Guidelines, which are referenced in the Data Tables, are available from the National Technical Information Service (NTIS), Attn: Order Desk, 5285 Port Royal Road, Springfield, VA 22161 (tel: 703-487-4650).

Protocols approved by the Organization for Economic Cooperation and Development (OECD) are also acceptable if the OECD-recommended test standards conform to those specified in the Pesticide Data Requirements regulation (Part 158.70). Please note, however, that certain OECD standards (such as test duration, selection of test species, and degradate identification which are environmental fate requirements) are less restrictive than those in the EPA Assessment Guidelines listed above. When using the OECD protocols, they should be be modified as appropriate so that the data generated by the study will satisfy the requirements of Part 158. Normally, the Agency will not extend deadlines for complying with data requirements when the studies were not conducted in accord with acceptable standards. The OECD protocols are available from OECD, 1750 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

F. Procedures for requesting a change in testing protocol.

If you will generate the required data and plan to use test procedures which deviate from EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

You should submit your protocols before beginning testing, because the Agency will not ordinarily accept as sufficient studies using unapproved protocols. A request for protocol approval will not extend the timeframe for submission of the data, nor will extensions generally be given to conduct studies due to submittal of inappropriate protocols.

G. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data than is allowed by EPA's schedule, you may submit a request for an extension of time. Any request for a time extension which is made as an initial response to a section 3(c)(2)(B) request notice must be submitted in writing to the Product Manager listed at the end of this section and must be made by the 90-day deadline for response. Once dates have been committed to and EPA has accepted these commitments, any subsequent requests for a time extension must be submitted in writing to the Office of Compliance Monitoring at the address given in Section IX.E.

EPA will view failure to request an extension before the data submission response deadline as a waiver of any future claim that there was insufficient time to submit the data. While EPA considers your request, you must strive to meet the deadline for submitting the data.

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome.

A request for an extension does not extend the timeframe for submission of the data. If EPA denies your request for a time extension and you do not submit the data as requested, EPA may begin proceedings to suspend the registrations of your products.

H. PR Notice 86-5 and Any Other Requirements Referenced or Included Within this Notice.

All data submitted in response to this Notice must comply with EPA requirements regarding the reporting of data, including the manner of reporting, the completeness of results, and the adequacy of any required supporting (or raw) data, including, but not limited to, requirements referenced or included in this Notice or contained in PR Notice 86-5 (issued July 29, 1986).

I. Existing stocks provision upon suspension or cancellation.

The Agency has determined that if a registration is suspended for failure to respond to a DCI request under FIFRA sec. 3(c)(2)(B), an existing stocks provision is not consistent with the Act. Accordingly, the Agency does not anticipate granting permission to sell or distribute existing stocks of suspended product except in rare circumstances. If you believe that your product will be suspended or cancelled and that an existing stocks provision should be granted, you have the burden of clearly demonstrating to EPA that granting such permission would be consistent with the Act. The following information must be included in any request for an existing stocks provision:

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing stocks and your estimate of the time required for their sale or distribution; and

2. Demonstration that such a provision would be consistent with the provisions of FIFRA.

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Under its DCI authority, EPA has determined that certain product-specific data are required to maintain your registrations in effect. Product-specific data are derived from testing using a specific formulated product, and, unlike generic data, generally support only the registration of that product. All such data must be submitted by the dates specified in this Registration Standard.

If you have a manufacturing use product, these data are listed in Table B. If you have an end use product, the data are listed in Table C. As noted earlier, the Agency has decided that it will not routinely require product-specific data for end use products at this time. Therefore, Table C may not be contained in this Registration Standard; if there is no Table C, you are not required to submit the data at this time.

In order to comply with the product specific data requirements, you must follow the same procedures as for generic data. See Section VI.D, E, F, and G. You should note, however, that product chemistry data are required for every product, and the only acceptable responses are options VI.D.1. (submit data) or VI.D.6.(cancellation of registration).

Failure to comply with the product-specific data requirements for your products will result in suspension of the product's registration.

VIII. REQUIREMENT FOR SUBMISSION OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 162.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling requirements specific to products containing this pesticide are specified in Section IV.D of this Registration Standard. Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling as required, which complies with 40 CFR 162.10 and the specific instructions in Section IV.D., EPA may seek to cancel or suspend the registration of your product under FIFRA sec. 6.

IX. INSTRUCTIONS FOR SUBMISSION

A. Manufacturing Use Products (MUPs) containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division for each product subject to this Registration Standard:

a. The "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments.[5]

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Generic Data Exemption Statement (EPA Form 8570-27), if applicable.

d. Evidence of compliance with data compensation requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99. Refer to Certification With Respect to Citation of Data Form.

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[5] If on the Summary Sheet, you commit to develop the data, present arguments that a data requirement is not applicable or should be waived, or submit protocols or modified protocols for Agency review, you must submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This submission is in addition to responding to the Product Manager, and should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted to the Office of Compliance Monitoring.)

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Application for Pesticide Registration (EPA Form 8570-1).

b. Two copies of any required product-specific data (See Table B).

c. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

d. Product Specific Data Report (EPA Form 8580-4).

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

B. Manufacturing Use Products containing the subject pesticide in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA sec. 3(c)(2)(B) Summary Sheet, with appropriate attachments[5] (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4)

c. Generic Data Exemption Statement (EPA Form 8570-27), if applicable.

2. Within 9 months of receipt of this document, you must submit to the Product Manager:

Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within the time frames set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

C. End Use Products containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any product-specific data, if required by Table C.

b. Product Specific Data Report (EPA Form 8580-4), if Table C lists required product-specific data.

c. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

D. End Use Products containing the subject active ingredient as one of multiple active ingredients

Within 9 months from the receipt of this document, you must submit to the Product Manager:

Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

E. Intrastate Products containing the subject pesticide either as sole active ingredient or in combination with other active ingredients.

These products are being called in for full Federal registration. Producers of these products are being sent a letter instructing them how to submit an application for registration.

F. Addresses

The required information must be submitted to the following address:

George LaRocca
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

The address for submissions to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460.

I. DATA APPENDICES

GUIDE TO TABLES

Tables A, B, and C contain listings of data requirements for the pesticides covered by this Registration Standard.

Table A contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.

Table B contains product-specific data requirements that apply only to a manufacturing use product.

Table C contains product-specific data requirements that apply only to an end use product.

The data tables are generally organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

2. Test Substance (Column 2). This column lists the composition of the test substance required to be used for the test, as follows:

TGAI = Technical grade of the active ingredient
PAI = Pure active ingredient
PAIRA = Pure active ingredient, radio labeled
TEP = Typical end use formulation
MP = Manufacturing use product
EP = End use product

Any other test substances, such as metabolites, will be specifically named in Column 2 or in footnotes to the table.

3. Use pattern (Column 3). This column indicates the use patterns to which the data requirement applies. Use patterns are the same as those given in 40 CFR Part 158. The following letter designations are used for the given use patterns:

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food
F = Greenhouse, non-food
G = Forestry
H = Domestic outdoor
I = Indoor
N/A = There are no registered use patterns for which the data requirement applies.

4. Does EPA have data? (Column 4). This column indicates one of three answers:

YES - EPA has data in its files that completely satisfy this data requirement. These data may be cited by other registrants in accordance with data compensation requirements of Part 152, Subpart E.

PARTIALLY - EPA has some data in its files, but such data do not fully satisfy the data requirement. In some cases, the Agency may possess data on one of two required species, or may possess data on one test substance but not all. The term may also indicate that the data available to EPA are incomplete. In this case, when the data are clarified, or additional details of the testing submitted by the original data submitter, the data may be determined to be acceptable. If this is the case, a footnote to the table will usually say so.

NO - EPA either possesses no data which are sufficient to fulfill the data requirement, or the data which EPA does possess are flawed scientifically in a manner that cannot be remedied by clarification or additional information.

5. Bibliographic citation (Column 5). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

6. Must additional data be submitted? (Column 6). This column indicates whether the data must be submitted to the Agency. If column 3 indicates that the Agency already has data, this column will usually indicate NO. If column 3 indicates that the Agency has only partial data or no data, this column will usually indicate YES. In some cases, even though the Agency does not have the data, EPA will not require its submission because of the unique characteristics of the chemical; because data on another chemical can be used to fulfill the data requirement; or because the data requirement has been waived or reserved. Any such unusual situations will be explained in a footnote to the table.

7. Timeframe for submission (Column 7). If column 5 requires that data be submitted, this column indicates when the data are to be submitted, based on the issuance date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

8. Footnotes (at the end of each table). Self-explanatory.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	Timeframe for Submission2/
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	TGAI	All			Yes	9 Months
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	All			Yes	9 Months
61-3 - Discussion of Formation of Impurities	TGAI	All			Yes	9 Months
Analysis and Certification of Product Ingredients:						
62-1 - Preliminary Analysis	TGAI	All			Yes	12 Months
62-2 - Certification of Limits	TGAI	All			Yes	12 Months
62-3 - Analytical Methods to Verify Certified Limits	TGAI	All			Yes	12 Months
Physical and Chemical Characteristics:						
63-2 - Color	TGAI	All			Yes	9 Months
63-3 - Physical State	TGAI	All			Yes	9 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	Timeframe for Submission2/
§158.120 Product Chemistry (cont'd)						
Physical and Chemical Characteristics: (cont'd)						
63-4 - Odor	TGAI	All			Yes	9 Months
63-5 - Melting Point	TGAI	All			Yes3/	9 Months
63-6 - Boiling Point	TGAI	All			Yes4/	9 Month
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	All			Yes	9 Months
63-8 - Solubility	TGAI or PAI	All			Yes	9 Months
63-9 - Vapor Pressure	TGAI or PAI	All			Yes	9 Months
63-10 - Dissociation Constant	TGAI or PAI	All			Yes	9 Months
63-11 - Octanol/Water Partition Coefficient	PAI	All			Yes	9 Months
63-12 - pH	TGAI	All			Yes	9 Months
63-13 - Stability	TGAI	All			Yes	9 Months
Other Requirements:						
64-1 - Submittal of Samples	TGAI, PAI	All			Reserved5/	To be Determined

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	Timeframe for Submission2/
§158.120 Product Chemistry (cont'd)						

1/ Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

2/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

3/ Required if the technical is a solid at room temperature.

4/ Required if the technical is a liquid at room temperature.

5/ These data are required via this Standard. When submittal of samples becomes necessary, the Agency will request them from the registrant.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Data Submission[1]
§158.125 Residue Chemistry					
171-4 - Nature of Residue (Metabolism)					
- Plants	PAIRA	Yes	00085407 00074844 00013545 00154122 00151525	No	
- Livestock	PAIRA	Partially	00013546 00066696 00117261 00117262 00049977 00096511 00126462 00126463	Yes[2]	18 Months (8 Months - Progress Report)
171-4 - Residue Analytical Method					
- Plant and Animal Residues	TGAI	Partially	00107572, 05004395 00049087, 00115993, 00049971, 00117257, 00049975, 00117747, 00051556, 00118113, 00060469, 00042702, 00060470, 00042704, 00060472, 00042706, 00074706, 00047472, 00118115, 00118592, 00118639, 00139845, 00140392, 05002074, 00074777, 00049086,	Yes[3]	15 Months (8 Months - Progress Report)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Data Submission[1]/
§158.125 Residue Chemistry (cont'd)					
171-4 - Residue Analytical Method (cont'd)					
- Storage Stability Data	TEP or PAI	Partially	00074776, 00076809, 00140392,	Yes[4]/[5]/	18 Months (8 Months - Progress Report) (90 Days - Acceptable Protocol)
171-4 - Magnitude of Residue - Residue Studies for Each Food Use					
- Root and Tuber Vegetable Group					
o Radish	TEP	No		Yes[6]/	18 Months (8 Months - Progress Report)
- Leafy Vegetables Group					
o Lettuce	TEP	No		Yes[7]/	18 Months (8 Months - Progress Report)
- Fruiting Vegetables Group					
o Tomatoes	TEP	No		Yes[8]/	18 Months (8 Months - Progress Report)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Data Submission[1]
§158.125 Residue Chemistry (cont'd)					
- Curcurbit Vegetables Group					
o Cucumber	TEP	No		Yes[9]/	18 Months (8 Months - Progress Report)
- Miscellaneous Commodities					
o Tobacco	TEP	No		Yes[10]/	18 Months (8 Months - Progress Report)
o Figs	TEP	Partially	00076809	Yes[4]/	18 Months (8 Months - Progress Report)
o Mushrooms	TEP	Partially	00074658 00117686 00117690	Yes[4]/	18 Months (8 Months - Progress Report)
- Magnitude of the Residue in Nonperishable Raw Agricultural Commodities and Processed Food					
o Bulk-Stored Raw Commodities	TEP	Partially	00117747	Yes[4]/[11]/	18 Months (8 Months - Progress Report)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Data Submission1/
§158.125 Residue Chemistry (cont'd)					
o Packaged or Bagged Raw Commodities and Processed Food		Partially	00056593, 00056595, 00056596	Yes4/12/	18 Months (8 Months - Progress Report)
- Magnitude of the Residue in Meat, Milk, Poultry, and Eggs	TGAI	Partially	00119537, 00139843, 00139844, 00115945, 00116436, 00118639	Yes4/13/	18 Months (8 Months - Progress Report)
- Food-Handling Establishments	TEP	No		Yes14/	12 Months (8 Months - Progress Report)
- Processed and Cooked Commodites	TEP	No		Yes15/	18 Months (8 Months - Progress Report)

1/ Due dates refer to number of months following receipt of this Registration Standard or as otherwise indicated.

2/ Cattle, swine, and poultry must be directly treated for three consecutive days with [ethyl-1-^{14}C] dichlorvos at a rate sufficiently high to permit complete characterization and quantification of ^{14}C-residues in milk, eggs, and the meat, fat, kidney, and liver of animals sacrificed within 24 hours of the final treatment. To ascertain the adequacy of available enforcement methods, representative samples from the above studies must be analyzed using FDA multiresidue protocols and Method I in the PAM, Vol. II, Pesticide Reg. Section 180.235.

3/ Dichlorvos-fortified samples of a plant commodity and meat, milk and eggs must be subjected to analysis using FDA Multi Residue Protocol IV (available from NTIS under Order No. PB 86 203734/AS) to determine the usefulness of the method for enforcement purposes. Also, if metabolites of concern other than dichlorvos are found in the required livestock metabolism studies, enforcement methods capable of adequately quantifying such residues will be required.

4/ The storage intervals and conditions of storage of samples of the following commodities analyzed in previously-submitted studies must be provided: figs (fresh and dried); mushrooms; bulk, packaged and bagged nonperishable raw agricultural commodities and processed foods; meat, fat, and meat by-products of dairy cows and poultry;

milk; and eggs. This information must be accompanied by storage stability data depicting the percent decline in residues at the times and under the conditions specified. (No additional studies are required for plant or animal commodities stored frozen for up to 3 months or 8 weeks, respectively.) On receipt of these data, the adequacy of the previously-submitted residue data will be reevaluated.

To support crop residue data, storage stability studies must be conducted on both weathered samples and fortified frozen samples of one representative crop from each crop grouping (40 CFR §180.34) on which registered uses of dichlorvos exist. Analyses of each crop must be conducted over a time period that includes the time interval that the raw agricultural commodity is held on frozen storage prior to the crop residue analysis. To support residue data on processed commodities, fortified storage stability data are required for all processing studies summitted to the Agency. Analyses must be conducted over a time period that includes the frozen storage of the raw agricultural commodity prior to processing and each processed commodity prior to the residue analysis. Acceptable protocols must be submitted to the Agency ninety (90) days after receipt of this Notice. The protocols must be approved by the Agency prior to initiating the studies.

(a) Storage stability data using weathered samples. Data are required on the parent compound in which crop samples field treated with a typical end-use product are frozen immediately upon harvesting. The integrity of the samples must be maintained by freezing. The samples must be analyzed for dichlorvos the day they arrive at the analytical laboratory, and then stored frozen and analyzed periodically for dichlorvos during the time intervals specified in the Agency approved protocols.

(b) Storage stability data using fortified samples. Data are required on dichlorvos and metabolites of concern in which a group of untreated samples of raw agricultural comodities and process crops are fortified (spiked) with only dichlorvos (pure active ingredient) and other groups are fortified individually with each metabolite of concern. Immediately after fortification, the samples fortified with dichlorvos must be analyzed for dichlorvos and samples fortified with other metabolites of concern must be analyzed for only the metabolite with which the sample was fortified. Sample integrity must be maintained by freezing, and analyses for dichlorvos and metabolites must be conducted during the time intervals specified in the Agency approved protocols.

Storage stability data for livestock/poultry feeding studies. If cattle and poultry feeding studies are required (see footnote 13), fortified storage stability studies will be required on all animal commodities (i.e., tissues, milk and eggs) for which residue data are submitted to the Agency. Analyses must be conducted over a time period that includes the time interval that each commodity is held in frozen storage prior to residue analyses.

of storage of samples analyzed. These data must be accompanied by data depicting the stability of residues under the conditions and for the time intervals specified, with the exception of plant commodities stored frozen for 3 months or animal commodities stored frozen for 8 weeks. However, if the required animal metabolism studies for direct animal treatments reveal the presence of metabolites of concern other than dichlorvos, residue data for direct animal treatments must be accompanied by storage stability data for all sample intervals.

6/ Data depicting dichlorvos residues in or on radishes harvested 24 hours after the final application in a treatment regimen consisting of four fogging treatments at 3-day intervals repeated monthly are required. Registrant has choice of using the 10% RTU formulation at 16.7 fl oz product applied with a thermal fog generator or 1 lb product (0.1 lb/ai) of the 10% PrL per 50,000 ft^3.

7/ Data depicting residues of dichlorvos in or on lettuce, harvested 24 hours after the final application in a treatment series consisting of four fogging treatments at 3-day intervals repeated monthly during the growing season are required. Registrant has choice of using either the 10% RTU formulation at 16.7 fl oz product per 50,000 cu ft, or 1 lb (0.1 lb/ai) of the 10% PrL per 50,000 cu ft. Application of the RTU should be made using a thermal fog generator. Residue data must be provided for lettuce with and without wrapper leaves.

8/ Data depicting residues of dichlorvos in or on tomatoes following multiple, pre- and postharvest application at maximum rates are required. Acceptable examples of such data would be values generated from tomatoes harvested 24 hours after the last of four applications administered at 3-day intervals using either 16.7 fl oz of the 10% RTU or 1 lb of the 10% PrL per 50,000 cu ft. The four-treatment application schedule must be repeated monthly during the growing season prior to the final series. Harvested tomatoes must be treated twice postharvest with the 1% D and, in separate tests, the 4 lb/gal EC formulation at the rate of 0.01 lb/ai/ton of fruit. Tomatoes must be treated immediately after harvest and again after transit and samples collected for analysis immediately following the latter treatment.

9/ Data depicting dichlorvos residues in or on cucumbers harvested 24 hours after the final application in a treatment regimen consisting of four fogging treatments at 3-day intervals repeated monthly are required. Registrant has the option of using either the 10% RTU formulation at 16.7 fl oz product per 50,000 cu ft or the 10% PrL at 1 lb product (0.1 lb/ai) per 50,000 cu ft. Application of the RTU must be made using a thermal fog generator.

10/ Residue data reflecting total residues on stored tobacco following multiple space treatments with an EC or SC/L formulation of DDVP at 100 g/ai/50,000 cu ft are required. If residue levels of 0.1 ppm or greater are detected, total residues on cured or dried tobacco must be determined. If total residues on cured or dried tobacco are $\geq$ 0.1 ppm, pyrolysis products derived from the active ingredient must be characterized and the level of residue in smoke must be quantified.

11/ Data reflecting ULV application of dichlorvos vapors from a 5% SC/L formulation at 100 g ai/50,000 cu ft to exposed bulk stored cocoa beans, coffee beans, wheat, corn, nuts, peanuts and soybeans, are required. Samples must be removed for residue analysis 6 hours after application.

12/ Data depicting residues in packaged or bagged nonperishable processed food (cereals, flour, sugar, cookies, and crackers), and packaged or bagged raw agricultural commodites (dried beans, cocoa beans, coffee beans, corn, nuts, peanuts, and soybeans) collected 6 hours after aerosol treatment with a PrL formulation at 50 g/ai/50,000ft^3 of chamber are required. An appropriate tolerance revision must be proposed. Alternatively, the registrant may choose to cancel the aerosol uses.

13/ Residues of dichlorvos must be determined in the fat, muscle, liver, and kidney of ruminants sacrificed 24 hours after 28 consecutive days of ingestion of 1.3 ppm (1X), 3.8 ppm (3X), and 13.0 ppm (10X) of DDVP in the total diet (dry weight basis). Residues must also be determined in milk collected twice daily throughout the feeding period. Residues of dichlorvos must also be determined in fat, muscle, liver, and kidney of poultry sacrificed 24 hours after 28 consecutive days of ingestion of 1.6 ppm (1X), 4.8 ppm (3X), and 16.0 ppm (10X) of DDVP in the total diet (dry weight basis). Residues must also be determined in eggs collected twice daily throughout the feeding period. Further, residues of dichlorvos must also be determined in the muscle, liver, kidney, and fat of swine fed 28 consecutive days with 2 ppm (1X), 6 ppm (3X), and 20 ppm (10X) of DDVP in the total diet (dry weight basis) and orally dosed once at 6 mg/lb body wight (anthelmintic use) on day 28. Animals must be sacrificed 24 hours after the final dose.
Swine must be mist sprayed with 1 fl oz of a 1% ai finished spray per day for 28 consecutive days and sacrificed within 24 hours after the final treatment. Residues must be determined in muscle, liver, kidney, fat, and skin. If residues of concern other than dichlorvos are found in the required animal metabolism studies, additional studies regarding the magnitude of such residues in cattle and poultry following direct treatment at maximum label rates are required.

14/ A petition for a food additive regulation must be submitted or the use in food areas of food handling establishments, restaurants, or other areas where food is prepared or processed must be deleted from the labeling. The following type data must accompany the petition:

o Food service establishments (restaurants and groceries) must be treated via space treatment (PrL), food-manufacturing establishments (two types) must be treated via space treatment (SC/L), and food processing establishments (two types) must be treated via space treatment (PrL). Treatments must be made at maximum registered rates. From these applications, residues of concern from direct deposition of spray droplets on food, volatilization and subsequent absorption by foods, and all other possible modes of exposure of foods and residue transfer routes as outlined in the EPA Pesticide Assessment Guidelines, Subdivision O, Residue Chemistry, 171-04(C)(5) must be determined. Representative food samples must be examined for residues of concern from these possible modes of exposure, the food must include an oily food (e.g., butter), baked cereal products, beverages, raw and processed meats, and fresh fruits and vegetables (lettuce). Tests must also include conditions of possible misuse of dichlorvos formulations, e.g., applying an exaggerated rate or direct application of dichlorvos to exposed foods (refer to EPA Pesticide Guidelines for details of the type of data required). Final disposition of the food additive regulation is dependent upon the Agency's position regarding the Delaney Clause issues.

§158.125 Residue Chemistry (cont'd)

15/ Data must be submitted depicting residues in: (i) crude and refined oil, starch, grits, meal, flour and grain dust processed from field corn; (ii) bran, flour, middlings, shorts and grain dust processed from wheat, (iii) hulls, bran, polished rice, and grain dust processed from rice, (iv) meal, crude and refined oil, and soapstock processed from peanuts, (v) meal, hulls, soapstock, and crude and refined oil processed from cottonseed; (vi) meal, hulls, soapstock, crude and refined oil, and "grain" dust processed from soybeans, and (vii) wet and dry pomace, puree, catsup, and juice processed from tomatoes. All raw agricultural commodities (RACs) from which processed products are obtained must bear measurable residues of DDVP, and tomatoes must bear measurable weathered residues. Exaggerated application rates may be necessary to ensure that measurable residues occur on the RACs. If residues are found to concentrate in any of these processed commodities, appropriate food/feed additive tolerances must be proposed. However, final disposition of these food/feed additive regulations is dependent upon the Agency's position regarding Delaney Clause issues.
Data must also be submitted depicting residues in: (i) cooked meat and eggs, and pasteurized milk, (ii) cocoa butter and chocolate; (iii) coffee beverage as consumed, and (iv) tomato paste. These food items must be prepared/cooked from uncooked meat, eggs, milk, cocoa beans, coffee beans, and tomatoes bearing measurable residues. Residue levels in both the uncooked commodities and in the cooked foods must be reported.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]
§158.130 Environmental Fate						
DEGRADATION STUDIES-LAB:						
161-1 - Hydrolysis	TGAI or PAIRA	A,B,D,E,F,H	No		Yes	9 Months
Photodegradation						
161-2 - In Water	TGAI or PAIRA	A,B,D	No		Yes	9 Months
161-3 - On Soil	TGAI or PAIRA	A	No		Yes	9 Months
161-4 - In Air	TGAI or PAIRA	A	No		Yes	9 Months
METABOLISM STUDIES-LAB:						
162-1 - Aerobic Soil	TGAI or PAIRA	A,B,E,F,H	No		Yes	27 Months[2] (8 Months - Progress Report)
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No		Yes[3]	To be determined
162-3 - Anaerobic Aquatic	TGAI or PAIRA	D	No		Yes	27 Months[2] (8 Months - Progress Report)
162-4 - Aerobic Aquatic	TGAI or PAIRA	D	No		Yes	27 Months[2] (8 Months - Progress Report)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1/]
§158.130 Environmental Fate (continued)						
MOBILITY STUDIES:						
163-1 - Leaching and Adsorption/ Desorption	TGAI or PAIRA	A,B,D,E,F,H	Partially	00064796	Yes[4/]	12 Months
163-2 - Volatility (Lab)	TEP	A,E,F	No		Yes	12 Months
163-3 - Volatility (Field)	TEP	A,E,F	No		Reserved[5/]	To be Determined
DISSIPATION STUDIES - FIELD:						
164-1 - Soil	TEP	A,B,H	No		Yes	27 Months[2/] (8 Months - Progress Report)
164-2 - Aquatic (Sediment)	TEP	D	No		Yes	27 Months[2/] (8 Months - Progress Report)
164-3 - Forestry	TEP	N/A	No		No	
164-4 - Combination and Tank Mixes		N/A	No		No	
164-5 - Soil, Long-term	TEP	A	No		Reserved[6/]	To be Determined
ACCUMULATION STUDIES:						
165-1 - Rotational Crops (Contined)	PAIRA	N/A	No		No	

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission 1/
§158.130 Environmental Fate (continued)						
165-2 - Rotational Crops (Field)	TEP	N/A	No		No	
165-3 - Irrigated Crops	TEP	D	No		Yes	39 Months 2/ (8 Months - Progress Report)
165-4 - In Fish	TGAI or PAIRA	A,B,D	No		No 7/	
165-5 - In Aquatic Nontarget Organisms	TEP	D	No		No 8/	

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

2/ The first progress report is due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.

3/ Not required if an acceptable anaerobic aquatic study is submitted.

4/ Data are only partially satified from data developed from the Naled Registration Standard. In the study submitted, the parent compound was addressed, but the degradates were not. This constitute a data gap.

5/ This study is required pending the results of the laboratory volatility study.

6/ Based on the aerobic soil metabolism study or field dissipation study, if 50% dissipation is reached by the time of subsequent applications, no long-tem study is required.

7/ Not required because the octanol/water partition coefficient is less than 1,000.

8/ Not required because fish accumulation is not indicated (octanol/water coefficient is 156), and the potential for direct discharge is low.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
§158.140 Reentry Protection						
132-1 - Foliar Dissipation	TEP	A,B,E,F,I	No		Yes2/	18 Months (90 Days - Acceptable Protocol (8 Months - Progress Report)
132-1 - Soil Dissipation	TEP	N/A	No		No	
133-4 - Inhalation Exposure	TEP	I	No		Yes3/	18 Months5/ (90 Days - Acceptable Protocol) (8 Months - Progress Report)
§158.142 Spray Drift						
201-1 - Droplet Size Spectrum	TEP	A,B,D	No		Yes	18 Months
201-1 - Drift Field Evaluation	TEP	A,B,D	No		Yes	18 Months
§158.75 Other Exposure Data						
Dermal and Inhalation Exposure	TEP	I	No		Yes4/	18 Months (90 Days - Acceptable Protocol) (8 Months - Progress Report)

1/ Due dates refer to number of months following receipt of this Registration Standard or as otherwise indicated.

2/ For each use (fig, turf, greenhouse (food and non-food), and mushroom houses) , the Registrant is required to propose an acceptable reentry interval based on dissipation or residues (decline curve), on human exposure to those residues, and on toxicity of dichlorvos.

§158.130 Environmental Fate (continued)

3/ Data are required t support use of total release foggers and aerosol products used in residential buildings.
Data are also required to support the use of foggers in commercial warehouses.

4/ Dermal and inhalation exposure data for applicators are required to support use of aerosol products in residential buildings.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]/
§158.135 Toxicology						
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	TGAI	A,B,D,E,F,H,I	Yes	00005467	No	
81-2 - Acute Dermal Toxicity - Rabbit	TGAI	A,B,D,E,F,H,I	Yes	00005467	No	
81-3 - Acute Inhalation Toxicity - Rat	TGAI	A,B,D,E,F,H,I	Yes	00137239	No	
81-7 - Delayed Neurotoxicity - Hen	TGAI	A,B,D,E,F,H,I	No		Yes	9 Months
SUBCHRONIC TESTING:						
82-1 - 90-Day Feeding - Rodent and Nonrodent (Dog)	TGAI	A,E,I	Partially	00059398	Yes[2]/	12 Months
82-2 - 21-Day Dermal - Rabbit	TGAI	A,B,D,E,F,H,I	No		Yes[3]/	9 Months
82-4 - 90-Day Inhalation - Rat	TEP	A,B,D,E,F,H,I	Yes	00063569	No[4]/	
82-5 - 90-Day Neurotoxicity	TGAI	A,B,D,E,F,H,I	No		Reserved[5]/	
CHRONIC TESTING:						
83-1 - Chronic Toxicity - Rodent and Nonrodent	TGAI	A,E	Partially	00013550	Yes[6]/	50 Months[7]/ (8 Months- Progress Report)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
§158.135 Toxicology (continued)						
83-2 - Oncogenicity - Mouse and Rat	TGAI	A,E	Yes	40299401	No	
83-3 - Teratogenicity - Rat and Rabbit	TGAI	A,E	Partially	00063564	Yes8/	15 Months (8 Months- Progress Report)
83-4 - Reproduction - Rat 2-generation	TGAI	A,E	No		Yes	39 Months7/ (8 Months- Progress Report)
MUTAGENICITY TESTING:						
84-2 - Gene Mutation	TGAI	A,E	Yes	00046435,40303301 00142663,40303302 00146101,40300303 40299201,40300305 40300306,00024704	No	
84-3 - Structural Chromosomal Aberration	TGAI	A,E	Yes	40303304,40166901 00152680,00152681 00152682	No	
84-4 - Other Genotoxic Effects	TGAI	A,E	Yes	00024704,40303302	No9/	
85-1 - General Metabolism	PAI or PAIRA	A,B,D,E,F,H,I	No		Yes	24 Months7/ (8 Months - Progress Report)
SPECIAL TESTING						
Dermal Absorption	PAI or PAIRA	A,B,D,E,F,H,I	No		Yes	6 Months (60 Days- Acceptable Protocol)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
§158.135 Toxicology (continued)						

1/ Due dates refer to the number of months following receipt of the Registration Standard by the registrant, unless otherwise indicated.

2/ A subchronic rodent study is required. An acceptable 2-year chronic feeding dog study is available and supersedes the need for a subchronic dog study.

3/ This study is required because of repeated dermal exposure of applicators to dichlorvos.

4/ There is no valid subchronic inhalation study for dichlorvos. However, this requirement is satisfied by citation to the 2-year rat inhalation study.

5/ This study is required via this Standard depending on the results of the delayed neurotoxicity study. If the results show neuropathy or neurotoxicity, the Agency will request that the 90-day neurotoxicity study be submitted by the registrant.

6/ A rodent chronic feeding toxicity study is required. This may be satisfied by a 2-year rat feeding/oncogenicity study. The 2-year dog feeding study is acceptable.

7/ The first progress report is due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.

8/ The rabbit teratology study is acceptable. A rat teratology study is required.

9/ The Agency does not have data to satisfy this requirement. However, data requirements are not imposed in this Standard, since acceptable data have been received for the other mutagenicity categories (gene mutation and structural chromosomal abberation) and dichlorvos has been classified as a B2 oncogen. Further requirements for mutagenicity testing are unnecessary.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]/
§158.145 Wildlife and Aquatic Organisms						
SPECIAL TESTING:						
70-1 - Residue Monitoring	TEP[2]/	D	No		Yes[3]/	24 Months (90 Days - Acceptable Protocol) (8 Months - Progress Report; semi-annually thereafter)
AVIAN AND MAMMALIAN TESTING:						
71-1 - Acute Avian Oral Toxicity	TGAI	B,D,E,F, H,I	No		Yes	9 Months
71-2 - Avian Subacute Dietary						
- Upland Game Bird	TGAI	B,D,E,F, H,I	Yes	00022923	No	
- Waterfowl	TGAI	B,D,E,F, H,I	Yes	00022923	No	
71-3 - Wild Mammal Toxicity	TGAI	N/A				
71-4 - Avian Reproduction Upland Game Bird and Waterfowl	TGAI	B,D	No		Yes	24 Months (90 Days - Acceptable Protocol) (8 Months - Progress Report; semi-annually thereafter)

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]
§158.145 Wildlife and Aquatic Organisms (continued)						
71-5 - Simulated Field Testing and Actual Field Testing - Mammals and Birds	TEP	B,D	No		Reserved[4]	To be Determined
72-1 - Freshwater Fish Toxicity						
- Coldwater Fish Species	TGAI	B,D,E,F, H,I	Yes	40094602	No	
- Warmwater Fish Species	TGAI	B,D,E,F, H,I	Yes	40094602	No	
- Unique Formulation (Warmwater and Coldwater Species)	TEP	B,D	No		Yes[5]	9 Months
- Degradation Product (Warmwater and Coldwater Species)	Degradation Product	D	No		Reserved[6][7]	To be Determined
AQUATIC ORGANISM TESTING:						
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	B,D,E,F, H,I	Yes	40094602	No	
- Unique Formulation	TEP	D	No		Yes[5]	9 Months
- Degradation Product (Warmwater and Coldwater Species)	Degradation Product	D	No		Reserved[6][7]	To be Determined

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.145 Wildlife and Aquatic Organisms (continued)						
72-3 - Acute Toxicity to Estuarine and Marine Organisms (fish, mollusk, abd shrimp)	TGAI	D	No		Yes[8]	12 Months
- Unique Formulation	TEP	D	No		Yes[5]	12 Months
- Degradation Product	Degradation Product	D	No		Yes[6/7]	12 Months
72-4 - Fish Early Life Stage, and Aquatic Invertebrate Life Cycle (Freshwater Species and Estuarine/Marine Species)	TGAI	D	No		Yes[9]	15 Months (8 Months - Progress Report)
- Degradation Product	Degradation Product	D	No		Reserved[10]	To be Determined
						27 Months (8 Months - Progress Report, semi-annually thereafter)
72-6 - Aquatic Organism Accumulation	TGAI, PAI or Degradation Product	D	No		No[11]	

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.145 Wildlife and Aquatic Organisms (continued)						
72-7 - Simulated Field Testing and Actual Field Testing -Aquatic Organisms	TEP	D	No		Reserved4/	To be Determined

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1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

2/ Data must be derived from typical end-use products of the type used (i.e., 2 and 4 lb/gal ECs and 50% liquid soluble concentrate) in the control of mosquitoes (larvae and adults) and gnats.

3/ In order to fully evaluate the hazards posed to nontarget orgainisms, residue monitoring studies are required. The aquatic use pattern will require an aquatic residue monitoring study to evaluate the hazards to aquatic organisms. The 24(c) fig use will require an aquatic and terrestrial residue monitoring study to evaluate the hazards to aquatic organisms. The data derived from the residue studies will help determine the potential for accumulation and the need for full field studies. Monitoring of dichlorvos and its degradation products should begin at the beginning of the insect breeding/infestation season and continued until residues are nondetectable, or at least within the magnitude of the LC50 values reported for aquatic and terrestrial organisms. If residues continue to be detectable at the onset of the second insect breeding/infestation season, monitoring must continue for the duration of the season to assess the potential for accumulation. Residues of dichlorvos and its degradation products must be measured in water, sediments, vegetation, fish, invertebrates, insects and birds. The aquatic use (mosquito control) pattern study rationale for site selection must include a minimum of eight sites representing freshwater systems (i.e., swamps, streams, ponds, etc.,) and saltwater systems (i.e., salt marshes with low and moderate intertidal flushing rates). The aquatic use pattern monitoring study must be accomplished with those typical end-use products used for mosquito larvicide and adulticide purposes for comparative purposes. The 24(c) fig use pattern study must be accomplished with those typical end-use products applied to figs. At least six sites representing terrestrial and aquatic environments in or near fig fields must be sampled. An approved protocol is required within 90 days of receipt of this Standard. If the protocol's experimental design or the collection of monitoring data progresses into the second insect infestation/breeding season, a time extension for data submission purposes must be formally requested.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission

§158.145 Wildlife and Aquatic Organisms (continued)

4/ These data are required via this Standard: if the results of the lower tiered studies, residue monitoring study, and environmental fate studies show that birds and mammals and aquatic organisms may be exposed to dichlorvos levels of toxicological concern, the Agency will request field testing from the registrant at that time.

5/ Acute organism testing must be derived from typical end-use products (2 or 4 lb/gal EC's). Volatility and octanol/water coefficient properties of dichlorvos will require flow through studies to be conducted with actual measured concentrations.

6/ Dichlorvos degradation products are: 2,2-Dichlorovinyl O-methyl phosphate (DMD), 2-2-Dichloroacetaldehyde (DCA), 2,2-Dichloro-1-ethanol (DCE), O,O-Dimethyl phosphate, and phosphoric acid.

7/ These data are required via this Standard depending on the results of the environmental fate studies and fish early life stage and invertebrate life cycle studies.

8/ The partially available supplemental data indicates that dichlorvos is comparatively moderately to highly toxic to estuarine/marine fish species, with the exception of the sheepshead minnow, which demonstrates a much higher exposure tolerance. As a result, alternate species (silverside, pinfish, spot, etc.) must be used for the test. Such species must be indicative of the coastal environment, adaptive to captivity or laboratory culture environments, and demonstrate sensitivity to toxic substances exposure.

9/ Because of the volatility and octanol/water coefficient properties of dichlorvos, flow-through studies using actual measured concentrations are required.

10/ These data are required via this Standard depending on the outcome of the required environmental fate studies. Acute organism testing must be derived from typical end-use products (2 or 4 lb/gal EC's). Volatility and octanol/water coefficient properties of dichlorvos will require flow through studies to be conducted with actual measured concentrations. Dichlorvos degradation products are: 2,2-Dichlorovinyl O-methyl phosphate (DMD), 2-2-Dichloroacetaldyde (DCA), 2,2-Dichloro-1-ethanol (DCE), O,O-Dimethyl phosphate, and phosphoric acid.

11/ These data are not required because dichlorvos is not a persistent chemical and because the water/octanol coefficient is greater than 1,000.

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission 1/
§158.155 Nontarget Insect						
NONTARGET INSECT TESTING - POLLINATORS:						
141-1 - Honey Bee Acute Contact LD_{50}	TGAI	B,H	Yes	00036935	No	
141-2 - Honey Bee - Toxicity of Residues on Foliage	TEP	B,H	No		Yes2/	15 Months (8 Months-Progress Report)
141-4 - Honey Bee Subacute Feeding Study	Reserved3/					
141-5 - Field Testing for Pollinators	TEP	B,H	No		Reserved4/	To be Determined
NONTARGET INSECT TESTING - AQUATIC INSECTS:						
142-1 - Acute Toxicity to Aquatic Insects	Reserved5/					
142-2 - Aquatic Insect Life Cycle Study	Reserved5/					
142-3 - Simulated or Actual Field Testing for Aquatic Insects	Reserved5/					
143-1 thru 143-3 - NONTARGET INSECT TESTING-PREDATORS AND PARASITES	Reserved5/					

TABLE A
GENERIC DATA REQUIREMENTS FOR DICHLORVOS

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission 1/
§158.155 Nontarget Insect (continued)						

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ As data from the acute toxicity study indicate a high toxicity, residual toxicity data are required.
3/ These data are required via this Standard pending development of test methodology.
4/ These data are required via this Standard pending results of the residual bee toxicity study.
5/ These data are required via this Standard pending Agency decision as to whether data requirement should be established.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DICHLORVOS

Data Requirement	Test2/ Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	MP	A,B,D,E,F,H,I	Partially	00005467	Yes3/	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	MP	A,B,D,E,F,H,I	Partially	00005467	Yes3/	9 Months
81-3 - Acute Inhalation Toxicity - Rat	MP	A,B,D,E,F,H,I	Partially	00137239	Yes3/	9 Months
81-4 - Primary Eye Irritation - Rabbit	MP	A,B,D,E,F,H,I	Partially	00076822	Yes3/	9 Months
81-5 - Primary Dermal Irritation - Rabbit	MP	A,B,D,E,F,H,I	Partially	00127783	Yes3/	9 Months
81-6 - Dermal Sensitization - Guinea Pig	MP	A,B,D,E,F,H,I	No		Yes	9 Months

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1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

2/ Formulation intermediates are also included in the category of manufacturing-use products.

3/ Data will support technical grade formulations (93% and above). Data must be submitted to support all other formulations.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DICHLORVOS

Data Requirement	Test1/ Substance	Use Patterns	Does EPA Have Data?2/	Bibliographic Citation 2/	Must Additional Data be Submitted?	Timeframe for Submission3/
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	MP	All			Yes	9 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	All			Yes	9 Months
61-3 - Discussion of Formation of Impurities	MP	All			Yes	9 Months
Analysis and Certification of Product Ingredients:						
62-1 - Preliminary Analysis	MP	All			Yes	12 Months
62-2 - Certification of Limits	MP	All			Yes	12 Months
62-3- Analytical Methods to Verify Certified Limit	MP	All			Yes	12 Months
Physical And Chemical Characteristics:						
63-2 - Color	MP	All			Yes	9 Months
63-3 - Physical State	MP	All			Yes	9 Months
63-4 - Odor	MP	All			Yes	9 Months

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DICHLORVOS

Data Requirement	Test[1]/ Substance	Use Patterns	Does EPA Have Data?[2]/	Bibliographic Citation [2]/	Must Additional Data be Submitted?	Timeframe for Submission[3]/
§158.120 Product Chemistry (continued)						
Physical and Chemical Characteristics (continued)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	All			Yes	9 Months
63-12 - pH	MP	All			Yes	9 Months
63-14 - Oxidizing or Reducing Action	MP	All			Yes	9 Months
63-15 - Flammability	MP	All			Yes	9 Months
63-16 - Explodability	MP	All			Yes	9 Months
63-17 - Storage Stability	MP	All			Yes	15 Months (8 Months - Progress Report)
63-18 - Viscosity	MP	All			Yes	15 Months (8 Months - Progress Report)
63-19 - Miscibility	MP	All			Yes	9 Months
63-20 - Corrosion Characteristics	MP	All			Yes	15 Months (8 Months - Progress Report)
Other Requirements:						
64-1 - Submittal of Samples	MP	All			Reserved[4]/	To be Determined

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DICHLORVOS

Data Requirement	Test1/ Substance	Use Patterns	Does EPA Have Data?2/	Bibliographic Citation 2/	Must Additional Data be Submitted?	Timeframe for Submission3/
§158.120 Product Chemistry (continued)						

1/ Formulation intermediates are also included in the category of manufacturing-use products.

2/ Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each manufacturing-use product. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

3/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

4/ These data are required via this Standard. When submittal of samples becomes necessary, the Agency will request them from the registrant.

II. LABELING APPENDICES

SUMMARY-1

LABEL CONTENTS

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 162.10(h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 162.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD - FLAMMABILITY Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in the PHYS/CHEM Labeling Appendix. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section IV indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

Classification Labeling Requirements

If your product has been classified for restricted use, the following label requirements apply:

1. All uses restricted.

a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv)

b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix II, STOR, PEST/DIS, and CONT/DIS to determine the storage and disposal instructions appropriate for your products.

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 162.10]

COLLATERAL LABELING

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

SUMMARY-6

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

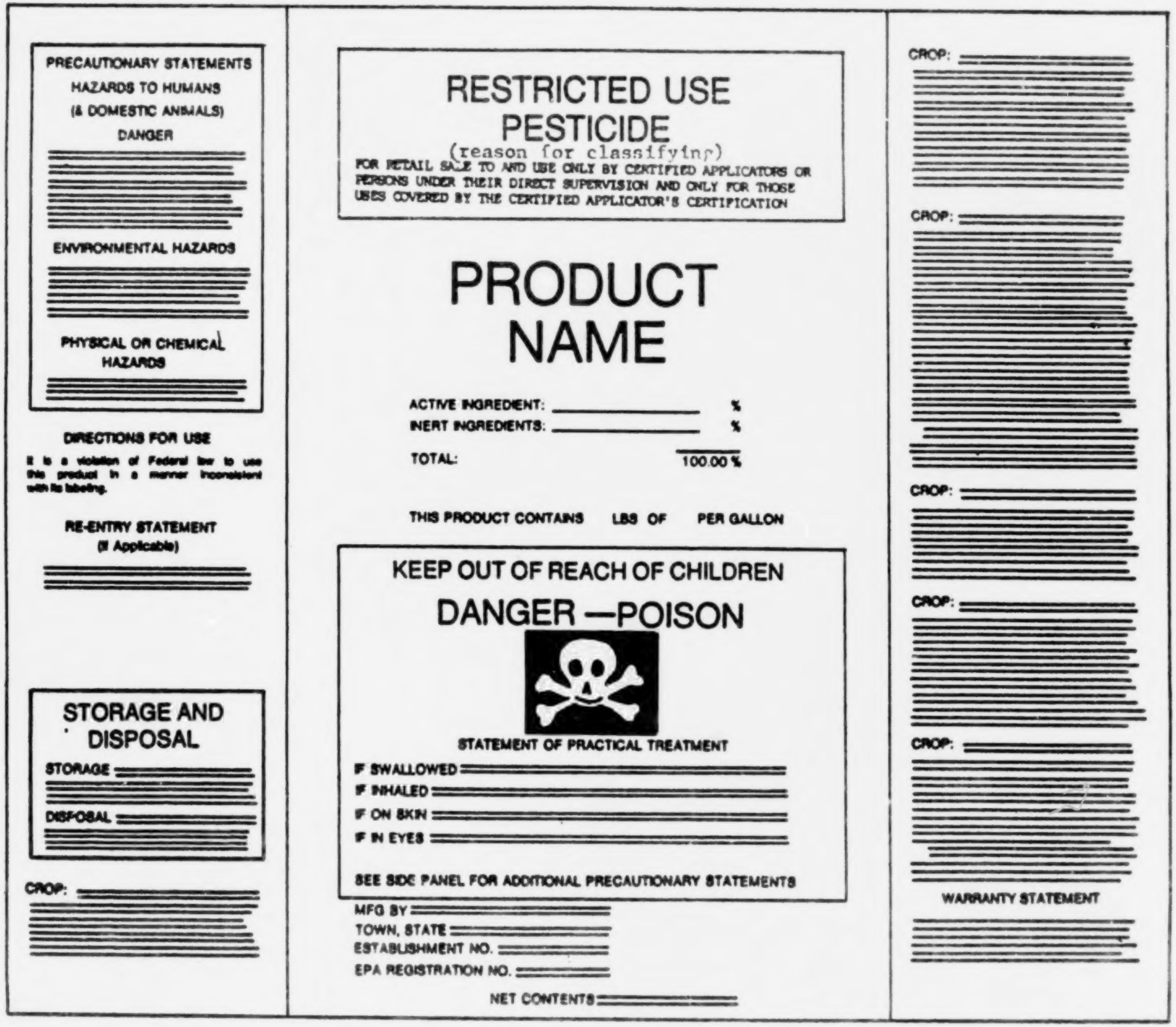
ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of Practical Treatment or First Aid	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYS/CHEM-1

PHYSICAL/CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. All Other Pressurized Containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.



PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
DANGER

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL
HAZARDS

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

RE-ENTRY STATEMENT
(If Applicable)

STORAGE AND
DISPOSAL

STORAGE ______

DISPOSAL ______

CROP: ______

RESTRICTED USE
PESTICIDE
(reason for classifying)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION

PRODUCT
NAME

ACTIVE INGREDIENT: ______ %
INERT INGREDIENTS: ______ %
TOTAL: 100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

DANGER —POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED ______
IF INHALED ______
IF ON SKIN ______
IF IN EYES ______

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY ______
TOWN, STATE ______
ESTABLISHMENT NO. ______
EPA REGISTRATION NO. ______
NET CONTENTS ______

CROP: ______

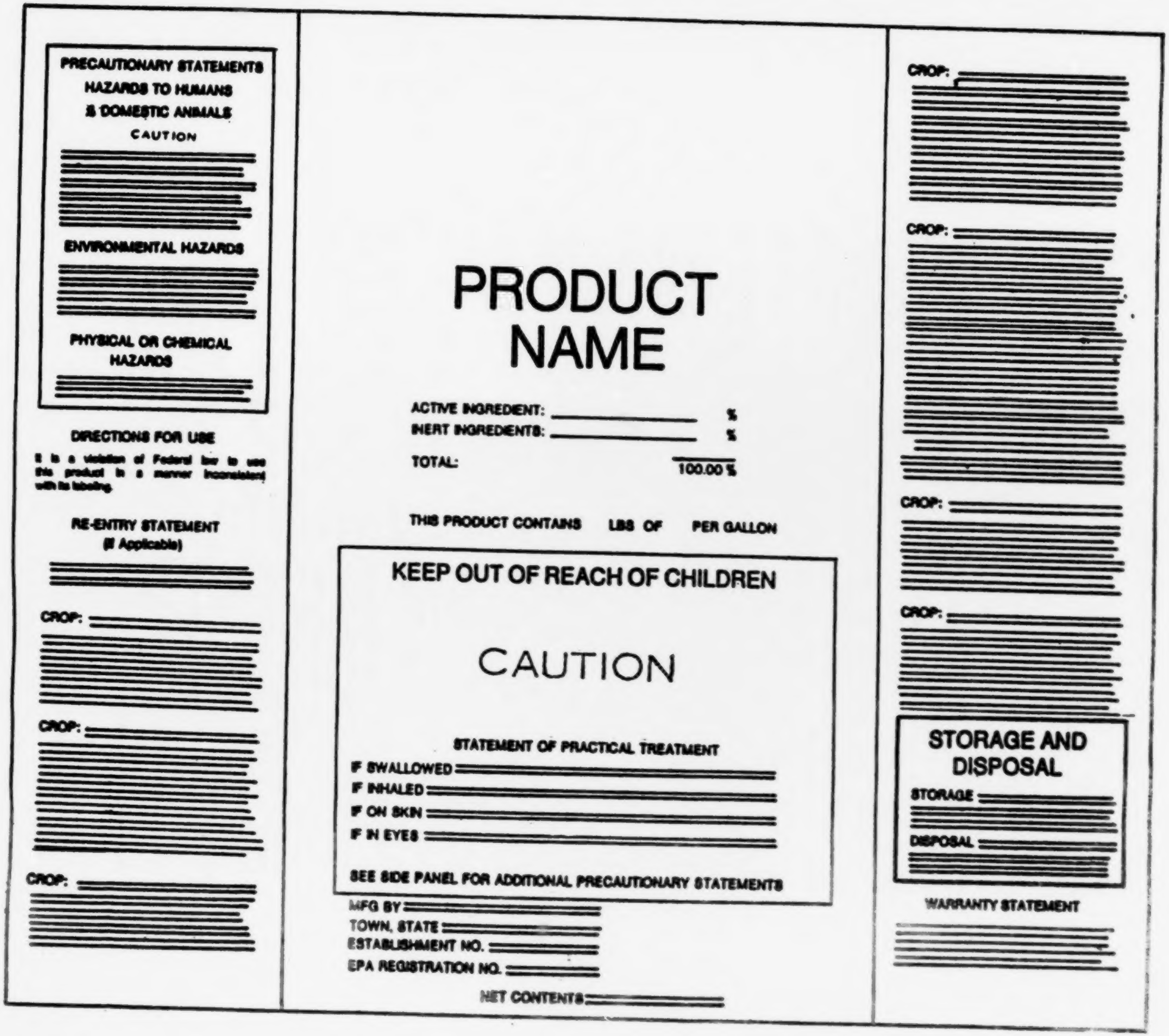
CROP: ______

CROP: ______

CROP: ______

CROP: ______

WARRANTY STATEMENT



PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL HAZARDS

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

RE-ENTRY STATEMENT
(If Applicable)

CROP:

CROP:

CROP:

PRODUCT NAME

ACTIVE INGREDIENT: ______ %
INERT INGREDIENTS: ______ %
TOTAL: 100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED
IF INHALED
IF ON SKIN
IF IN EYES

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY
TOWN, STATE
ESTABLISHMENT NO.
EPA REGISTRATION NO.

NET CONTENTS

CROP:

CROP:

CROP:

CROP:

STORAGE AND DISPOSAL

STORAGE

DISPOSAL

WARRANTY STATEMENT

~~cant obtained the data from another firm (identify); applicant copied data from a publication; applicant obtained a copy of the data from EPA).~~

~~(d) The applicant shall submit with his application a statement that EPA, in its evaluation of the properties, efficacy, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:~~

~~(1) The data the applicant has submitted to EPA under paragraph (b) of this section;~~

~~(2) Other data pertaining to the safety of the product's active ingredients, rather than to the safety of the end-use product; and~~

~~(3) Existing tolerances, food additive regulations, exemptions, and other clearances issued under the Federal Food, Drug, and Cosmetic Act.~~

~~(e) If the applicant knows that any item of data he submitted under this section was generated by (or at the expense of) another person who originally submitted the data to EPA (or its predecessor, USDA) on or after January 1, 1970, to support an application for registration, experimental use permit, or amendment adding a new use to an existing registration, or for reregistration (unless the applicant and the original data submitter have reached written agreement on the amount and the terms of payment of any compensation that may be payable under FIFRA section 3(c)(1)(D)(ii) with regard to approval of the application), the applicant shall submit to EPA a statement that he has furnished to each such identified original data submitter:~~

~~(1) A notification of the applicant's intent to apply for registration, including the proposed product name;~~

~~(2) An offer to pay the person compensation, with regard to the approval of the application, to the extent required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D);~~

~~(3) An identification of the item(s) of data to which the offer applies;~~

~~(4) An offer to commence negotiations to ascertain the amount and terms of compensation to be paid; and~~

~~(5) The applicant's name, address and telephone number.~~

~~(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product, during formulation, of one or more other registered pesticide products purchased from another producer, then the applicant shall also comply with § 162.9-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on the Administrator's consideration of) the following data:~~

~~(1) All data submitted or specifically cited by the applicant in support of the registration; and~~

~~(2) Each other item of data in the Agency's files which:~~

~~(i) Concerns the properties or effects of any such active ingredient; and~~

~~(ii) Is one of the types of data that EPA would require to be submitted for scientific review by EPA if the applicant sought the initial registration under FIFRA Section 3(c)(5) of a product with composition and intended uses identical to those proposed for the applicant's product, under the data requirements in effect on the date EPA approves the applicant's present application.~~

~~(Secs. 3, 6, and 25 of FIFRA, as amended, 7 U.S.C. 136 *et seq.*)~~

~~[44 FR 27953, May 11, 1979]~~

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide products shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by

any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68° F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run parallel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg.	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg.	Greater than 5000 mg/kg.
Inhalation LC_{50}	Up to and including .2 mg/liter.	From .2 thru 2 mg/liter	From 2. thru 20 mg/liter	Greater than 20 mg/liter.
Dermal LD_{50}	Up to and including 200 mg/kg.	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects	Corrosive; corneal opacity not reversible within 7 days.	Corneal opacity reversible within 7 days; irritation persisting for 7 days.	No corneal opacity; irritation reversible within 7 days.	No irritation.
Skin effects	Corrosive	Severe irritation at 72 hours.	Moderate irritation at 72 hours.	Mild or slight irritation at 72 hours.

(i) *Human hazard signal word*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) *Placement and prominence.* All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.].	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) *Physical or chemical hazards.* Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20° F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
Flash point above 20° F and not over 80° F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20° F and not over 80° F	Flammable. Keep away from heat and open flame.
Above 80° F and not over 150° F	Do not use or store near heat or open flame.

(i) *Directions for Use*—(1) *General requirements*—(i) *Adequacy and clarity of directions.* Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) *Placement of directions for use.* Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular:" and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) *Exceptions to requirement for direction for use*—(A) Detailed directions for use may be omitted from labeling of pesticides which are intended for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(*1*) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(*2*) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(*3*) The product will not come into the hands of the general public except after incorporation into finished products; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(*1*) The label clearly states that the product is for use only by physicians or veterinarians;

(*2*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(*3*) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(*1*) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(*2*) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(*3*) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(2) *Contents of Directions for Use.* The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment required.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv).)

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

(E) For restricted use pesticides, a statement that the pesticide may be applied under the direct supervision of a certified applicator who is not physically present at the site of application but nonetheless available to the person applying the pesticide, unless the Agency has determined that the pesticide may only be applied under the direct supervision of a certified applicator who is physically present.

(F) Other pertinent information which the Administrator determines to be necessary for the protection of man and the environment.

(j) *Statement of Use Classification.* By October 22, 1976, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j)(1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(1) *General Use Classification.* Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

(2) *Restricted Use Classification.* Pesticide products bearing direction for use(s) classified restricted shall bear statements of restricted use classification on the front panel as described below:

(i) *Front panel statement of restricted use classification.* (A) At the top of the front panel of the label, set in type of the same minimum sizes as required for human hazard signal words (see table in § 162.10(h)(1)(iv)), and appearing with sufficient prominence relative to other text and graphic material on the front panel to make it unlikely to be overlooked under customary conditions of purchase and use, the statement "Restricted Use Pesticide" shall appear.

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) *Advertising.* [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 36571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978]

~~§ 162.11 Criteria for determinations of unreasonable adverse effects.~~

~~(a) *Criteria for Issuance of Notice of Intent to Deny Registration, Cancel Registration, or to Hold a Hearing*—(1) *Presumption.* (i) A rebuttable presumption shall arise that a notice of intent to deny registration pursuant to section 3(c)(6) of the Act, a notice of intent to cancel registration pursuant to section 6(b)(1) of the Act, or a notice of intent to hold a hearing to determine whether the registration should be cancelled or denied, as appropriate, shall be issued, upon a determination by the Administrator that the pesticide meets or exceeds any of the criteria for risk set forth in paragraph (a)(3) of this section. Upon such determination, the Administrator shall issue notice by certified mail to the applicant or registrant, as the case may be, stating that the applicant or registrant has the opportunity to submit evidence in rebuttal of such presumption in accordance with paragraph (a)(4) of this section. The applicant or registrant shall have forty five (45) days from the date such notice is sent to submit evidence in rebuttal of the presumption; provided, however, that for good cause shown the Administrator may grant an additional sixty~~

PHYS/CHEM-1

PHYSICAL/CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. All Other Pressurized Containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE INSTRUCTIONS FOR PESTICIDES

Heading:

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL."

Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

CONT/DIS-1

CONTAINER DISPOSAL INSTRUCTIONS

The label of each product must bear container disposal instructions appropriate to the type of container.

1. Domestic use products must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. All other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording)

1/ Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

PESTICIDE DISPOSAL INSTRUCTIONS

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients that are Acute Hazardous Wastes (see list in this Appendix) or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

> "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

3. The labels of all products, except those intended for domestic use, containing active or inert ingredients that are Toxic Hazardous Wastes (see list in this Appendix) or meet any of the criteria in 40 CFR 261, Subpart C for a hazardous waste must bear the following pesticide disposal statement:

> "Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

4. Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

"Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

5. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

PESTICIDE ACTIVE INGREDIENTS THAT ARE ACUTE HAZARDOUS WASTES

I. PESTICIDES ON THE "E" LIST (with RCRA # and CAS # [40 CFR 261.33(e)]

Acrolein	P003	107-13-1
Aldicarb	P070	116-06-3
Aldrin	P004	309-00-2
Allyl alcohol	P005	107-18-6
Aluminum phosphide	P006	1302-45-0
4-Aminopyridine (Avitrol)	P008	504-24-5
Arsenic acid	P010	7778-39-4
Arsenic pentoxide	P011	1303-28-2
Arsenic trioxide	P012	1327-53-3
Calcium cyanide	P021	592-01-8
Carbon disulfide	P022	75-15-0
p-Chloroaniline	P024	106-47-8
Cyanides (soluble cyanide salts not otherwise specified)	P030	
Cyanogen chloride	P031	506-77-4
Dieldrin	P037	60-57-1
O,O-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate (disulfoton)	P039	298-04-4
O,O-Diethyl O-pyrazinyl phosphorothioate (Zinophos®)	P040	297-97-2
Dimethoate	P044	60-51-5
O,O-Dimethyl O-p-nitrophenyl phosphorothioate (methyl parathion)	P071	298-00-0
4,6-Dinitro-o-cresol and salts	P047	534-52-1
4,6-Dinitro-o-cyclohexylphenol	P034	131-89-5
Dinoseb	P020	88-85-7
Endosulfan	P050	115-29-7
Endothall	P088	129-67-9
Endrin	P051	72-20-8
Famphur	P097	52-85-7
Fluoroacetamide	P057	640-19-7
Heptachlor	P059	76-48-8
Hexachlorohexahydro-exo,exo-dimethanonaphthalene (Isodrin)	P069	465-73-6
Hydrocyanic acid	P063	74-90-8
Methomyl	P066	16752-77-5
alpha-Naphthylthiourea (ANTU)	P072	86-88-41
Nicotine and salts	P075	54-11-5
Octamethylpyrophosphoramide (OMPA, schradan)	P085	152-16-9
Parathion	P089	56-38-2
Phenylmercuric acetate (PMA)	P092	62-38-4
Phorate	P094	298-02-2
Potassium cyanide	P098	151-50-8
Propargyl alcohol	P102	107-19-7
Sodium azide	P105	26628-22-8
Sodium cyanide	P106	143-33-9
Sodium fluoroacetate	P058	62-74-8

Strychnine and salts	P108	57-24-9 60-41-3
O,O,O,O-Tetraethyl dithiopyrophosphate (sulfotepp)	P109	3689-24-5
Tetraethyl pyrophosphate	P111	107-49-3
Thallium sulfate	P115	7446-18-6
Thiofanox	P045	39196-18-4
Toxaphene	P123	8001-35-2
Warfarin (>0.3%)	P001	81-81-2
Zinc phosphide (>10%)	P122	1314-84-7

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II. PESTICIDES DERIVED FROM TRI-, TETRA-, AND PENTACHLOROPHENOLS [40 CFR 261.31]

2-Chloroethyl 2-(2,4,6-trichlorophenoxy) ethyl ether	F027	5324-22-1
Dehydroabietylammonium pentachlorophenoxide	F027	35109-57-0
Erbon	F027	136-25-4
O-ethyl O-(2,4,5-trichlorophenyl) ethylphosphonothioate	F027	327-98-0
2,2'-Methylenebis (3,4,6-trichlorophenol) (Hexachlorophene)	F027	70-30-4
--Potassium salt of	F027	67923-62-0
--Sodium salt of	F027	3247-34-5
--Disodium salt of	F027	5736-15-2
Pentachlorophenol	F027	87-86-5
--Potassium salt of	F027	7778-73-6
--Sodium salt of	F027	131-52-2
--Zinc salt of	F027	2917-32-0
--Zinc salt of N-alkyl (C_{16}-C_{18})-1,3-propanediamine	F027	
--Pentachlorophenyl laurate	F027	3772-94-9
Potassium trichlorophenate (2,4,6)	F027	2591-21-1
Potassium trichlorophenate (2,4,5)	F027	35471-43-3
Silvex	F027	93-72-1
--2-Butoxyethyl ester	F027	19398-13-1
--Butoxypolypropoxypropyl ester	F027	53404-07-2
--Butoxypropyl ester	F027	25537-26-2
--Diethanolamine salt	F027	51170-59-3
--Diisopropanolamine salt	F027	53404-09-4
--Dimethylamine salt	F027	55617-85-1
--Dipropylene glycol isobutyl ether ester	F027	53535-26-5
--Ethanolamine salt	F027	7374-47-2
--2-Ethylhexyl ester	F027	53404-76-5
--Isooctyl ester	F027	53404-14-1

--Isopropanolamine salt	F027	53404-13-0
--Monohydroxylaluminum salt	F027	69622-82-8
--Polypropoxypropyl ester	F027	83562-66-7
--Potassium salt	F027	2818-16-8
--Propylene glycol isobutyl ether ester	F027	53466-84-5
--Sodium salt	F027	37913-89-6
--Triethanolamine salt	F027	17369-89-0
--Triethylamine salt	F027	53404-74-3
--Triisopropanolamine salt	F027	53404-75-4
--Tripropylene glycol isobutyl ether ester	F027	53535-30-1
Sodium 2-(2,4,5-trichlorophenoxy) ethyl sulfate	F027	3570-61-4
Tetrachlorophenols	F027	25167-83-3
--Alkylamine*amine salt (as in fatty acids of coconut oil)	F027	
--Potassium salt	F027	53535-27-6
--Sodium salt	F027	25567-55-9
2,4,5-Trichlorophenol	F027	95-95-4
2,4,6-Trichlorophenol	F027	88-06-2
2,4,5-Trichlorophenol salt of 2,6-bis[(dimethylamino)methyl] cyclohexanone	F027	53404-83-4
2,4,5-Trichlorophenol, sodium salt	F027	136-32-3
2,4,6-Trichlorophenol, sodium salt	F027	3784-03-0
2,4,5-Trichlorophenoxyacetic acid	F027	93-79-8
--Alkyl C-12 amine salt	F027	53404-84-5
--Alkyl C-13 amine salt	F027	53404-85-6
--Alkyl C-14 amine salt	F027	53535-37-8
--N,N-diethylethanolamine salt	F027	53404-86-7
--Dimethylamine salt	F027	6369-97-7
--N,N-dimethyllinoleylamine salt	F027	53404-88-9
--N,N-dimethyloleylamine salt	F027	53404-89-0
--N-oleyl-1,3-propylene diamine salt	F027	53404-87-8
--Sodium salt	F027	13560-99-1
--Triethanolamine salt	F027	3813-14-7
--Triethylamine salt	F027	2008-46-0
--Alkyl (C3H7 - C7H9) ester	F027	
--Amyl ester	F027	120-39-8
--Butoxyethoxypropyl ester	F027	1928-58-1
--2-Butoxyethyl ester	F027	2545-59-7
--Butoxypropyl ester	F027	1928-48-9
--Butyl ester	F027	93-79-8
--Dipropylene glycol isobutyl ether ester	F027	53535-31-2
--2-Ethylhexyl ester	F027	1928-47-8
--Isobutyl ester	F027	4938-72-1

--Isopropyl ester	F027	93-78-7
--Propylene glycol isobutyl ether ester	F027	53466-86-7
--Tripropylene glycol isobutyl ether ester	F027	53535-32-3
4-(2,4,5-Trichlorophenoxy)butyric acid [2,4,5-TB]	F027	93-80-1
2-(2,4,5-Trichlorophenoxy)ethyl hydrogen sulfate [2,4,5-TES]	F027	69633-04-1
1,4',5'-Trichloro-2'-(2,4,5-trichlorophenoxy) methanesulfonanilide [Edolan U]	F027	69462-14-2

PESTICIDES THAT ARE TOXIC HAZARDOUS WASTES

PESTICIDES ON THE "F" LIST [40 CFR 261.33(f)] (with	RCRA #, and	CAS #
Acetone	U002	67-64-1
Acrylonitrile*	U009	107-13-1
Amitrole	U011	61-82-5
Benzene*	U019	71-43-2
Bis(2-ethylhexyl)phthalate	U028	117-81-7
Cacodylic acid	U136	75-60-5
Carbon tetrachloride*	U211	56-23-5
Chloral (hydrate) (chloroacetaldehyde)	U034	302-17-0
Chlordane, technical*	U036	57-74-9
Chlorobenzene*	U037	108-90-7
4-Chloro-m-cresol	U039	59-50-7
Chloroform*	U044	67-66-3
o-Chlorophenol	U048	95-57-8
Creosote	U051	8021-39-4
Cresylic acid (cresols)*	U052	1319-77-3
Cyclohexane	U056	110-82-7
Cyclohexanone	U057	108-94-1
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one (Kepone, chlordecone)	U142	143-50-0
1,2-Dibromo-3-chloropropane (DBCP)	U066	96-12-8
Dibutyl phthalate	U069	84-74-2
S-2,3-(Dichloroallyl diisopropyl-thiocarbamate) (diallate,Avadex)	U062	2303-16-4
o-Dichlorobenzene*	U070	95-50-1
p-Dichlorobenzene*	U072	106-46-7
Dichlorodifluoromethane (Freon 12®)	U075	75-71-8
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide, Kerb®)	U192	23950-58-5
Dichloro diphenyl dichloroethane (DDD)	U060	72-54-8
Dichloro diphenyl trichloroethane (DDT)	U061	50-29-3
Dichloroethyl ether	U025	1191-17-9
2,4-Dichlorophenoxyacetic, salts and esters (2,4-D)*	U240	94-75-7
1,2-Dichloropropane	U083	8003-19-8
1,3-Dichloropropene (Telone)	U084	542-75-6
Dimethyl phthalate	U102	131-11-3
Epichlorohydrin (1-chloro-2,3-epoxypropane)	U041	106-89-8
Ethyl acetate	U112	141-78-6
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)	U038	510-15-6

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*Proposed for deletion by TCLP proposal

Ethylene dibromide (EDB)	U067	106-93-4
Ethylene dichloride*	U077	107-06-2
Ethylene oxide	U115	75-21-8
Formaldehyde	U122	50-00-0
Furfural	U125	98-01-1
Hexachlorobenzene*	U127	118-74-1
Hexachlorocyclopentadiene	U130	77-47-4
Hexachloroethane*	U131	67-72-1
Hydrofluoric acid	U134	7664-39-3
Isobutyl alcohol*	U140	78-83-1
Lead acetate	U144	301-04-2
Lindane*	U129	58-89-9
Maleic hydrazide	U148	123-33-1
Mercury	U151	7439-97-6
Methoxychlor*	U247	72-43-5
Methyl alcohol (methanol)	U154	67-56-1
Methyl bromide	U029	74-83-9
Methyl chloride	U045	74-87-3
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene) [acute waste per 261.31]	U132	70-30-4
Methylene chloride*	U080	75-09-2
Methyl ethyl ketone*	U159	78-93-3
4-Methyl-2-pentanone (methyl isobutyl ketone)	U161	108-10-1
Naphthalene	U165	91-20-3
Nitrobenzene*	U169	98-95-3
p-Nitrophenol	U170	100-02-7
Pentachloroethane	U184	76-01-7
Pentachloronitrobenzene (PCNB)	U185	82-68-8
Pentachlorophenol* [acute waste per 261.31]	U242	87-86-5
Phenol*	U188	108-95-2
Pyridine*	U196	110-86-1
Resorcinol	U201	108-46-3
Safrole	U203	94-59-7
Selenium disulfide	U205	7488-56-4
Silvex [acute waste per 261.31]	U233	93-72-1
1,1,2,2-Tetrachloroethane*	U209	79-34-5
Tetrachloroethylene*	U210	127-18-4
2,3,4,6-Tetrachlorophenol* [acute waste per 261.31]	U212	
Thiram	U244	137-26-8
Toluene*	U220	108-88-3
1,1,1-Trichloroethane* (methyl chloroform)	U226	71-55-6
Trichloroethylene*	U228	79-01-6
Trichloromonofluoromethane (Freon 11®)	U121	75-69-4
2,4,5-Trichlorophenol* [acute waste per 261.31]	U230	95-95-4
2,4,6-Trichlorophenol* [acute waste per 261.31]	U231	88-06-2

2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)* [acute waste per 261.31]	U232	93-76-5
Warfarin (<0.3%)	U248	81-81-2
Xylene	U239	1330-20-7
Zinc phosphide (<10%)	U249	1314-84-7

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III. USE INDEX APPENDIX

EPA Compendium of Acceptable Uses

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

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2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

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c084001

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE* **

TYPE PESTICIDE: Insecticide, Acaricide

FORMULATIONS:

Tech	(93%, 100%)
FI	(2 lb/gal, 4 lb/gal, 0.25%, 0.5%, 1.46%, 1.53%, 1.67%, 2.04%, 2.14%, 2.55%, 3.33%, 3.333%, 3.4%, 3.778%, 4%, 4.7%, 5%, 5.1%, 6.67%, 9%, 10%, 10.2%, 10.75%, 10.8%, 11.34%, 12.5%, 12.75%, 13.45%, 15%, 17%, 18.55%, 18.75%, 20%, 20.4%, 25%, 25.5%, 26.9%, 27.2%, 33.3%, 34%, 35.8%, 40.8%, 43.65%, 50%, 90%)
D	(1%)
G	(0.043%, 0.1%, 0.25%, 0.5%, 0.6%, 1%, 5%, 20%)
P/T	(0.25%, 17.5%, 17.8%, 31%)
WP	(0.875%)
WP/D	(0.5%)
Impr	(4.7%, 5%, 9%, 9.6%, 9.95%, 10%, 11.8%, 15%, 19.2%, 20%, 54%)
EC	(0.2 lb/gal, 0.23 lb/gal, 0.25 lb/gal, 0.5 lb/gal, 0.6 lb/gal, 0.63 lb/gal, 0.67 lb/gal, 0.85 lb/gal, 1 lb/gal, 1.16 lb/gal, 1.4 lb/gal, 1.59 lb/gal, 2 lb/gal, 4 lb/gal, 4.48 lb/gal, 5.38 lb/gal, 5.5 lb/gal, 10 lb/gal, 0.42%, 0.5%, 0.54%, 0.6%, 0.75%, 0.94%, 1%, 1.07%, 1.26%, 1.4%, 1.5%, 2.5%, 2.51%, 2.89%, 3.17%, 3.2%, 3.75%, 4%, 4.24%, 4.49%, 4.7%, 5%, 5.19%, 5.7%, 5.85%, 6%, 6.3%, 7.35%, 9%, 9.81%, 10%, 11.95%, 12%, 12.01%, 12.31%, 14%, 15%, 18.5%, 18.75%, 20%, 22.3%, 23.4%, 23.7%, 23.8%, 43.2%, 44.5%, 100%)
SC/L	(0.07 lb/gal, 1.15 lb/gal, 2 lb/gal, 8 lb/gal, 8.39 lb/gal, 8.4 lb/gal, 10 lb/gal, 0.25%, 0.5%, 1%, 1.025%, 1.4%, 1.62%, 2.5%, 2.71%, 3.5%, 4.4%, 5%, 5.05%, 6%, 10%, 12.5%, 15%, 20%, 23.7%, 23.8%, 24.9%, 50%, 90%, 100%)
RTU	(0.74 lb/gal, 0.8 lb/gal, 1.13 lb/gal, 1.9 lb/gal, 2.2 lb/gal, 4 lb/gal, 5.8 lb/gal, 0.194%, 0.2%, 0.2005%, 0.25%, 0.3%, 0.307%, 0.4%, 0.44%, 0.5%, 0.51%, 0.54%, 0.55%, 0.75%, 1%, 2%, 4.98%, 5%, 8%, 8.7%, 10%, 15%, 20%, 30%, 50%, 100%)
PrL	(0.1%, 0.2%, 0.25%, 0.255%, 0.3%, 0.35%, 0.36%, 0.465%, 0.5%, 0.51%, 0.538%, 0.75%, 1%, 2%, 2.5%, 2.95%, 3.23%, 5%, 5.37%, 7%, 10%, 20%, 30%, 40%)
PrD	(10%)

GENERAL WARNINGS AND LIMITATIONS: Dichlorvos is classified as a RESTRICTED USE PESTICIDE (excluding domestic uses [household sprays containing 0.5 percent or less active ingredient], resin strips, and pet uses) due to cancer health hazard.

Worker Protection Statement:

a. Dichlorvos products classified for restricted use must protect worker by following protection guidelines listed below.

   1. Required For All Uses:

      Apply dichlorvos only when wearing the following protective clothing and equipment during mixing/loading, application, repair and cleaning of mixing, loading, and application

*Dichlorvos
DDVP
Vapona

**Dosages and formulations reflect the combined percentages of dichlorvos and its related compounds.

GENERAL WARNINGS AND LIMITATIONS (continued)

equipment, and disposal of the pesticide: protective suit of 1 or 2 pieces covering all parts of the body except head, hands, and feet; chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots); NIOSH or MSHA approved respirator. In addition, mixer/loaders must wear a chemical-resistant apron. If overhead exposure is likely, wear a hood or wide-brimmed hat. If pesticide comes in contact with skin, wash off with soap and water and contact a physician immediately. Always wash hands, face, and arms with soap and water before smoking, eating, drinking or toileting. Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Wear only clean clothes when leaving job; do not wear contaminated clothing. Personal clothing worn during work must be laundered separately from protective clothing and household articles. Store protective clothing separately from personal clothing. Clean or launder protective clothing after each use.

2. Optional:
If mixing/loading is performed using a closed system, the following protective clothing and equipment may be worn as an alternative: long-sleeved shirt; long-legged pants; chemical resistant gloves; chemical-resistant apron; shoes and socks. All other protective clothing and equipment required for use with open systems must be available nearby.

3. Required for fumigant, fog, mist, and aerosol applications to indoor sites (greenhouses; mushroom houses; tobacco and other types of warehouses; commercial, institution, and industrial establishments; dairy barns):
Reentry into treated areas is prohibited for 48 hours after the end of application, unless the following protective clothing and equipment is worn: protective suit of 1 or 2 pieces covering all parts of the body except head, hands, and feet; chemical resistant gloves; chemical resistant shoes (or chemical resistant shoe coverings or chemical resistant boots); NIOSH or MSHA approved respirator. A respirator need not be worn once the site has been thoroughly ventilated, as defined by one of the following: (1) 2 hours of ventilation using fans or other mechanical ventilation systems; (2) 4 hours of ventilation using vents, windows or other passive ventilation systems; (3) 11 hours with no ventilation, followed by 2 hours of passive ventilation; (4) 24 hours with no ventilation; or (5) the air concentration of dichlorvos is measured to be 1 mg/m3 or less. All entrances to the treated area must be posted with warning signs until the reentry interval has expired.

GENERAL WARNINGS AND LIMITATIONS (continued)

4. Required for coarse spray and paint applications to the sites specified above and for all applications to outdoor sites (figs; nursery ornamentals; commercial turf and lawns; commercial, institutional, and industrial establishments):
   Reentry into treated areas is prohibited for 48 hours after the end of application, unless the following protective clothing and equipment is worn: protective suit; chemical resistant gloves; chemical resistant shoes; NIOSH or MSHA approved respirator. If sprays have dried, the respirator need not be worn. The treated area must be posted with warning signs until the reentry interval has expired.

b. When dichlorvos is intended solely for homeowner use in and around dwellings which are not formulated as ready-to-use, wear chemical resistant gloves, long-sleeved shirt, long-legged shoes and socks. Do not allow children or pets to enter treated rooms until thoroughly ventilated, or to contact treated surfaces until sprays have dried.

Diluents: Emulsifiable concentrate formulations may be diluted with water or oil. Dilute soluble concentrate formulations with appropriate oil-based solvents such as diesel oil or kerosene and other odorless petroleum solvents. When using pressurized liquid formulations, hold container only in upright position to spray. Shake well before using and hold container 6 to 12 inches from surface.

Bee Caution:

Dichlorvos is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply dichlorvos or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Definition of Terms:

MAI - multiple active ingredient(s)

** Exact computation of actual dosage is not possible because of the lack of weight/volume information on the label. Extrapolation from other formulations reveals that the dosage from this label appears to fall within the range shown by formulations with known weight/volume ratios.

Claims for pest control limited to suppression of population are indicated by an entirely parenthesized pest name.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	TERRESTRIAL FOOD CROP		
	(Agricultural Crops)		
/06005AA	Figs		0.1 ppm 0.5 ppm (dried) Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used on this site (due to toxicity to birds and aquatic organisms).
		This site occurs only on Special Local Needs (SLN) labels and the uses have not been included in the report.	
/23032AA	Rangeland Grasses (bait application)		
		This site occurs only on Special Local Needs (SLN) labels and the uses have not been included in the report.	

TERRESTRIAL NONFOOD CROP

(Ornamental Plants and Forest Trees)

General Warnings and Limitations: Use limited to professional pest control operators. After using spray formulations, keep children and pets off treated areas until spray has dried. Do not apply or allow to drift on to lawn and garden fishponds or other bodies of water. Mosquitoes coming to rest on areas treated for control of turf and ornamental plant pests will be killed after treatment. The period of residual activity depends on weather conditions and time of application.
Apply to both upper and lower leaf surfaces and infested limb and trunk areas. Attempt to penetrate dense foliage but avoid spraying to the point of excessive runoff. Apply when pest first appears and repeat at 7 to 10 day intervals, if needed.
Claims for pest control on ornamental plants, lawn and turf are present only when dichlorvos is formulated with chlorpyrifos and dimethoate. No single active ingredient label of dichlorvos is registered for such uses.

/28083AA	Epcot Display Crops (not for consumption)		
		This site occurs only on Special Local Needs (SLN) labels and the uses have not been included in the report.	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/33010AA	Lawns		
/33008AA	Ornamental Turf (including perennial turf grasses grown for seed)		Immediately after application, thoroughly water to wash the chlorpyrifos/dichlorvos combination into the turf using 130 to 150 gallons of water per 5,000 square feet. Do not mow for 24 hours following treatment. Apply emulsifiable concentrate formulations as a coarse (large droplet) spray using a low pressure sprayer such as a knapsack type, hose attached applicator, or other similar equipment. Lawn should be moist at time of application and mowed.
ISASAAA	Ants	0.47-0.83 oz/ 5,000 sq. ft (0.25, 0.5, 0.63, 0.85, 1 lb/gal EC) or 0.5 gal 0.42% EC/5,000 sq. ft (0.42% EC) or 15 fl. oz 3.17%, 5.19%, 9% EC/5,000 sq. ft (3.17%, 5.19%, 9% EC)	Application to established lawns and turf. For chinch bug, apply when activity or damage appears (yellowing then browning of localized areas often developing into spots, then spreading through the lawn) usually mid-June for first brood and mid-August for second brood. Feeding continues until mid-October when temperatures cool. In northeastern states, apply in May or June when pest activity first appears. Repeat as needed, usually in July or August. Consult your State Agricultural Extension Service for proper timing of application in your area. To prevent chinch bug, apply as soon as daily temperatures reach 80 F (26.7 C) and repeat at 60 day intervals. For sod webworm, apply in late April or early May when pest first appears and repeat as needed, usually at 30 to 45 day intervals. Apply early or late in the day when pest is active. For European crane fly, consult your local State Agricultural Extension Service for proper timing of application in your area. Formulated with chlorpyrifos.
ITBCCFA	Armyworm (including fall armyworm)		
INASDUA	Billbugs		
ILAMAQA	Brown dog tick		
ILAWAAA	Chigger mites		
IQALAEA	Chinch bug		
ILAVABA	Clover mite		
IVAHAAA	Crickets (including field crickets and mole crickets)		
ITBCABA	Cutworms		
IMDAAAA	Earwigs		
IOBNABC	European crane fly (larvae)		
INAMADA	Flea beetles		
IVABAAA	Grasshoppers		
IRAFAAA	Leafhoppers		
ITBMABA	Sod webworms		
IIFAAEA	Sowbugs		
IRAEAAA	Spittlebugs		
INASBYA	Turfgrass weevils		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Lawns cluster (continued)		
INASDYA	Bluegrass billbug	0.94-1.67 oz/ 5,000 sq.ft (0.25, 0.5, 0.63, 0.85, 1 lb/gal EC) or 30 fl.oz 5.19%, 9% EC/5,000 sq.ft (5.19%, 9% EC)	Application to established lawns and turf. Apply early in the season when pest first appears and repeat as needed. Formulated with chlorpyrifos.
INBPAGC INBPAZC	European chafer (larvae) Japanese beetle (larvae)	0.94-3.34 oz/ 5,000 sq.ft (0.25, 0.5, 1 lb/gal EC) or 30-60 fl.oz 3.43%, 5.19% EC/5,000 sq.ft (3.43%, 5.19% EC)	Application to established lawns and turf. Apply when larvae are young and actively feeding near the soil surface, usually during late July or August or when 2 to 4 larval per square foot of soil are present. Consult your State Agricultural Extension Service for proper timing of application in your area. Formulated with chlorpyrifos.
INASBYA	Turfgrass weevils (including hyperodes weevils)	0.94-1.67 oz/ 5,000 sq.ft (0.25, 0.5, 0.85, 1 lb/gal EC) or 30 fl.oz 5.19%, 9% EC/5,000 sq.ft (5.19%, 9% EC)	Application to established lawns and turf. Apply to suspected problem areas in mid-April and repeat in mid-May. Consult your State Agricultural Extension Service for proper timing of application in your area. Formulated with chlorpyrifos.

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/32000AA	Ornamental Plants		
IRACAAA	Aphids	1-2.18 oz/ 100 gal (0.25, 0.5, 0.63 lb/gal EC) or 2 pts 5.19%, 9% EC/100 gal (5.19%, 9% EC)	Foliar application. Formulated with chlorpyrifos.
ITBKABA	Bagworm		
ITAUAEA	Eastern tent caterpillar		
ITABAIA	Fall webworm		
IVABAAA	Grasshoppers		
ILAAABA	Mites		
ITBNASA	Orangestriped oakworm		
IRAEAAA	Spittlebugs		
IRABAAA	Whiteflies		
ITBDADA	Yellownecked caterpillar		
ITBCABA	Cutworms	2-4.35 oz/ 100 gal (0.25, 0.5, 0.63 lb/gal EC) or 2 qts 5.19%, 9% EC/100 gal (5.19%, 9% EC)	
IRAFAAA	Leafhoppers		
IRAWAAA	Mealybugs		
ITADACA	Mimosa webworms		
ITBDAIA	Redlumped caterpillar		
IMOAAAA	Thrips		
ITBQAOA	Dogwood borer	0.25-0.54 lb/100 gal (0.25, 0.5, 0.63 lb/gal EC) or 1 gal 5.19%, 9% EC/100 gal (5.19%, 9% EC)	Bark application. Apply as a coarse, low pressure spray. For dogwood borer, apply to trunk and lower limbs of trees when the adults begin to emerge. Consult your State Agricultural Extension Service for proper timing of application in your area. Formulated with chlorpyrifos.
ITBQAEA	Lilac borer		
IRAHARG	Oak lecanium (crawlers)		
IRAKBRG	Pine needle scale (crawlers)		
ITBQANA	Rhododendron borer		
IRAKAZG	Tea scale (crawlers)		
IRAKBUG	White peach scale (crawlers)		
/35021AA	(Arborvitae)		
IRACAAA	Aphids	2 qts 1.5% EC/100 gal (1.5% EC)	Foliar application. Formulated with dimethoate.
ITBKABA	Bagworm		
ILAAABA	Mites		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Ornamental Plants (continued)		
/34022AA	(Azalea)		
/34070AA	(Holly (American, English))		
/34120AA	(Rose)		
IRACAAA	Aphids	2 pts 1.5% EC/100 gal (1.5% EC)	Foliar application. For control of leafminers on holly, apply in spring when pests first appear or in early summer for the control of larvae on infested leaves. Formulated with dimethoate.
IQAXAAA	Lace bugs		
IRAFAAA	Leafhoppers		
IMAAAGA	Leafminers		
ILAAABA	Mites		
IRAKAZA	Tea scale		
IMOKAAA	Thrips		
IRABAAA	Whiteflies		
/35028AA	(Birch)		
IRACAAA	Aphids	1 pt 1.5% EC/100 gal (1.5% EC)	Foliar application. For leafminers, apply when leaves are expanded (about mid-May) and repeat in early July. Formulated with dimethoate.
IMAAAGA	Leafminers		
/35049AA	(Elm)		
INBQBEA	Native elm bark beetle	5.3 fl.oz 5.19% EC/gal (5.19% EC)	Bark application. To prevent the adult beetle from overwintering in uninfected trees and to reduce beetle population in disease-free areas, apply to the bottom 9 feet of the trunk. Wet the trunk thoroughly but do not spray to run-off. Care should be taken to apply the spray right to the base of root flare. Apply from spring to early fall using a back pack mist sprayer or a hydraulic pressure sprayer. To reduce the twig and branch feeding on uninfected trees deemed to be high in value, apply to the tree crown. Formulated with chlorpyrifos.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Ornamental Plants (continued)		
/35102AA	(Prunus)		
ITBQAHA	Peachtree borer	0.75-1.5 lb/100 gal (0.25, 0.5, 0.63 lb/gal EC) or 3 gal 5.19%, 9% EC/100 gal (5.19%, 9% EC)	Bark application. Apply as a coarse, low pressure spray to trunk before newly hatched larvae enter the trees. Thoroughly wet all bark areas from ground level to scaffold limbs. Consult your State Agricultural Extension Service for proper timing of application in your area. Formulated with chlorpyrifos.
	(Noncrop, Wide Area and General Indoor/Outdoor Treatments)		
/680000A	Urban and Rural Outdoor Areas		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms). Dichlorvos is toxic to fish, birds and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, marshes, bogs and potholes). Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes.
IDAAAAA	Flies (including gnats and mosquitoes)	0.05-0.2 lb/A (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8.39, 8.4, 10 lb/gal SC/L) (1%, 15%, 20%, 23.7%, 50%, 90% SC/L)** or	Use limited to professional pest control operators. Outdoor fogging application. Do not treat areas where food or feed crops are growing. OR MAI Formulated with one or a combination of: beta-butoxy beta'-thiocyano diethyl ether; methylene chloride; propoxur; or ronnel.
ITAAABA	Moths		
ISAAADA	Wasps (including hornets)		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Urban and Rural Outdoor Areas (continued)		
		0.04 lb/A (0.07 lb/gal RTU) (1% RTU)**	
		--OR MAI--	
		1-1.5 pt 1% EC/A (1% EC) or 1:5-6 dilution [2 gal/A] (1.4% SC/L) or -- (0.5% RTU)	
		0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU)	Outdoor fogging application. Do not treat areas where food or feed crops are growing.
		Refer to INDOOR, (Noncrop, Wide Area, and General Indoor/Outdoor Treatments), Recreational Areas for treatments of general outdoor pests.	
/680000A	Urban and Rural Outdoor Areas (screwworm suppression)		
		This site occurs only on Special Local Needs (SLN) labels and the uses have not been included in the report.	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	GREENHOUSE FOOD CROP		
	(Agricultural Crops)		

General Warnings and Limitations: When applied as foggers or indoor space spray, operators must wear a full face mask jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for dichlorvos application under the provisions of 30 CFR Part 11. To prepare the greenhouse, close all doors, windows and ventilators. Lock or barricade all entrances, post warning signs and take whatever other precautions are necessary under the circumstances to prevent unprotected humans and domestic animals from entering the treated area. Adjust inside temperature to between 70 to 85 F (21.1 to 29.4 C). When using a thermal fog generator, adjust the metering valve or orifice size in the formulation line to produce a dry fog. Start fogging at the end of the greenhouse and walk down the center aisle, continuously moving away from the fog. Do not over-apply to the point where foliage is visibly wet. If the application is made during the day, keep the greenhouse tightly closed for at least 2 hours. Then ventilate for 2 hours before resuming regular work. If application is made in the late afternoon, the greenhouse can be kept closed all night. On the following morning, ventilate for 2 hours to render air safe for regular work. All work in the greenhouse must be suspended while ventilators remain closed. Ventilate by opening all doors and louvers before resuming work.

/10010CA /11005CA /13020CA /14014CA	Cucumber Tomato		0.5 ppm (expressed as naled) 24 hour preharvest interval through 16.7 fluid ounces of 10 percent liquid-ready to use formulation per 50,000 cubic feet, or 1 pound of 10 percent pressurized liquid formulation per 50,000 cubic feet. Do not use naled on crops that have been treated with dichlorvos.
IRACAAA IRAWAAA ITBUBCA ILAVAAA IMOAAAA IOABAFA IRABAAA	Aphids Mealybugs Omnivorous leafroller Spider mites Thrips Vegetable leafminer Whiteflies	16.7 fl.oz 10% RTU/ 50,000 cu.ft (10% RTU) or 1 lb 10% PrL/50,000 cu.ft (10% PrL)	Fumigation of greenhouse grown plants. Apply liquid-ready to use formulation using thermal fog generator. For spider mites, make 4 treatments at 3 day intervals and repeat the schedule monthly.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/13020CA	Lettuce		1 ppm (expressed as naled) 24 hour preharvest interval through 16.7 fluid ounces of 10 percent liquid-ready to use formulation per 50,000 cubic feet, or 1 pound of 10 percent pressurized liquid formulation per 50,000 cubic feet. Do not use naled on crops that have been treated with dichlorvos.
		Refer to Cucumber cluster for additional information.	
/61007CA	Mushroom Houses		0.5 ppm (expressed as naled) 1 day preharvest interval through 100 grams of 10 pounds per gallon of emulsifiable concentrate formulations per 50,000 cubic feet, or 50 fluid ounces of 10 percent liquid-ready to use formulations per 50,000 cubic feet (for aerosol or hot pipe method). Do not use naled on crops that have been treated with dichlorvos.
IOAHAAA IOAYABA IOBFACA	Gall midges Phorid mushroom flies Sciarid mushroom flies	0.5% finished spray [0.5-1 pt/ 100 sq. ft] (2 lb/gal EC)	Mushroom house treatment. Apply with a brush or as a coarse, wet spray to inside walls, around doors, ventilators and cracks in building before mushroom come into production. Do not spray inside walls after mushroom appears above soil beds. Thereafter, use only on the outside walls of mushroom houses.
		100 g/50,000 cu. ft (10 lb/gal EC)	Mushroom house treatment. Apply by aerosol or hot pipe method every 4 days as a preventive measure or when infestations are present. Repeat as needed.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Mushroom Houses (continued)		
	33-50 fl.oz 10% RTU/ 50,000 cu.ft (10% RTU) --OR MAI-- 1 pt 50% SC/L/4.4 gal solvent or 50 g/50,000 cu.ft (50% SC/L)	Fog application of mushroom house. Apply using thermal fog generator. Direct fog downward walking backward in the center aisle of the room. Keep nozzle of applicator away from beds. Do not allow fog to hit mushroom beds within 10 feet from the end of the gun. Use during spawn run twice weekly to prevent pest build-up. Thereafter, use as needed. OR MAI Formulated with 1,1,1-trichloroethane.
	This site also occurs on Special Local Needs (SLN) labels but its uses have not been included in the report.	
/14014CA Radish		0.5 ppm 24 hour preharvest interval through 16.7 fluid ounces of 10 percent liquid-ready to use formulation per 50,000 cubic feet, or 1 pound of 10 percent pressurized liquid formulation per 50,000 cubic feet.
	Refer to Cucumber cluster for additional information.	
Tomato		See Cucumber cluster.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	GREENHOUSE NONFOOD CROP		
	(Ornamental Plants and Forest Trees)		
	General Warnings and Limitations: Refer to GREENHOUSE FOOD CROP, (Agricultural Crops) for General Warnings and Limitations.		
/32000CA	Ornamental Plants		Do not apply to the following susceptible varieties of chrysanthemums: shasta, thelma, almega, fortune, golden chain, columbia, illini, scarlet, calvert's gold, vanguard, silver strand, illini cascade, illini glacier and kangaroo vine. Do not apply to fashionette rose variety.
IRACAAA	Aphids	3 oz/50,000 cu.ft (11.8 Impr) (10% PrD) or -- (54% Impr) or 2.5 oz/50,000 cu.ft (4 lb/gal EC) (4 lb/gal RTU) or 16-16.7 fl.oz 8%, 10% RTU/ 50,000 cu.ft (8%, 10% RTU)	Greenhouse fumigation. Impregnated material and pressurized dust formulations work by emitting smoke. To ignite, light sparkler at handle end and insert into contents. Emulsifiable concentrate formulation may be applied by hot plate or steam pipe application. For hot plate application, place hot plate (temperature of 200 F (93.3 C) in the center of greenhouse. For steam pipe application, pour the dosage on the main feeder pipes beginning at farthest end and walking toward exit. The liquid-ready to use formulation should be applied with a mist sprayer. For leafrollers, make 6 to 8 treatments at 7 day intervals. For spider mites, make 4 treatments at 3 day intervals and repeat the schedule monthly. For whiteflies, make 6 treatments at 5 day intervals.
IMAAAGA	Leafminers (including chrysanthemum leafminer)		
IMAAAEA	Leafrollers		
IRAWAAA	Mealybugs		
ILAAABA	Mites (including spider mites)		
IMOAAAA	Thrips		
IRABAAA	Whiteflies		

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Ornamental Plants (continued)		
	16 fl.oz 8% RTU/50,000 cu.ft (8% RTU)	Greenhouse fumigation. Apply by thermal fog generator. Walk backward down the entire length of the center aisle of the greenhouse directing the fog under the benches, swaying the machine back and forth, to blanket 2 benches from each side of the aisle. Keep the fog applicator nozzle at a minimum of 4 feet from plants. The fog applicator should never be in a fixed position. It is to be constantly moving so as to cover the entire area as evenly as possible. Do not over-apply to the point where foliage is visibly wet. For ground benches, walk backward down the center aisle directing the fog applicator nozzle at a 30 degree angle downward so that the fog hits the ground. Repeat applications as often as necessary. Length of exposure time is 1.5 hours with ventilators and doors closed. After exposure, ventilate/aerate for at least an hour before reentry. Formulated with beta-butoxy beta'-thiocyano diethyl ether and dicofol.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	DOMESTIC OUTDOOR		

General Warnings and Limitations: Dichlorvos is toxic to fish, birds and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, marshes, bogs and potholes). Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	(Household)		
/630030A	Domestic Dwellings (Outdoor)		
ISASAAA ILAWAAA ILAVABA IVAAABA IVAHAAA IMDAAAA IMNAAAA IOAAAAA IJCAAAA IDAMAAA IJEBAAA IMPBACA IIFAAEA IKAAAAA ILAAACA ITAJAAA	Ants Chigger mites Clover mite Cockroaches Crickets Earwigs Fleas Flies (including gnats) Millipedes Mosquitoes Scorpions Silverfish Sowbugs Spiders Ticks (including brown dog tick) Wasps (including cicada killer, hornets, mud dauber and papernest wasps)	-- (0.25% P/T) (0.5% RTU) (0.1%, 0.5%, 0.75% PrL) --OR MAI-- 6-16 fl.oz 0.5%, 0.6%. 1%, 2.5% EC/gal (0.5%, 0.6%, 1%, 2.5% EC) or -- (0.2%, 0.25%, 0.3%, 0.5%, 0.55% RTU) (0.1%, 0.2%, 0.255%, 0.3%, 0.35%, 0.36%, 0.465%, 0.5%, 0.538%, 2% PrL)	Outdoor application. Apply as a coarse, wet spray or apply with a paint brush depending on target pests and formulations. For ants, spray ant hills directly. For clover mites, earwigs and spiders, spray around window frames and other points of entry. Apply to outside foundation and porches to ground level. For cockroaches, (using pelleted/tableted formulation), apply as a bait. For flies, mosquitoes, and wasps, apply on screens, walls, doors and around window frames, light fixtures and other outdoor surfaces where pests congregate. For hornets, mud dauber wasps and paper wasps, thoroughly soak wasp nests after dark when pests have returned to their nests. For scorpions and spiders, spray directly on pests when possible. Treat surfaces of garages and out-buildings where pests congregate. Spray points of entry such as around window frames and along crevices. OR MAI Formulated with one or a combination of: allethrin; d-trans allethrin; beta-butoxy beta'-thiocyano diethyl ether; beta-thiocyanoethyl esters of mixed fatty acids of C10 to C18; 2-butoxyethanol; perthane; dimethoate; dioxathion; methylene chloride; propoxur; MGK 264; N-octyl sul-

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Domestic Dwellings (Outdoor) (continued)		
		foxide of isosafrole; diazinon; ronnel; piperonyl butoxide; pyrethrins; or methoprene.
	0.5% finished spray [0.04-0.12 lb/5,000 sq.ft] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC) (1.15, 8.39, 10 lb/gal SC/L) or 4-5 pt 1% RTU/5,000 sq.ft (1% RTU)	Use limited to professional pest control operators. Outdoor application. Refer to use direction above for additional information. OR MAI Formulated with one or a combination of: methylene chloride; propoxur; fenthion; ronnel; or chlorpyrifos.
	--OR MAI--	
	0.1-0.25% finished spray (0.25, 0.5, 0.63, 0.67 lb/gal EC) (8%, 9% EC) or 1 qt 1% EC, SC/L/3 qt water (1% EC) (1% SC/L) or -- (0.5% RTU) (0.5% PrL)	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwellings (Outdoor) (continued)		
		0.31-2 oz/ 100 gal (0.25, 0.5, 0.63, 0.85, 1 lb/gal EC) (5.19% EC)	Use limited to professional pest control operators. To help prevent infestations of buildings by ants, crickets, earwigs, millipedes and sowbugs, apply as a band 5 to 10 feet wide around and adjacent to buildings where pests are active and may find entrance. Apply as a coarse, wet spray to thoroughly and uniformly wet the band area. Formulated with chlorpyrifos.
IMNAAAA	Fleas	1-2 lb/100 gal or 0.01-0.03 lb/gal (2, 4 lb/gal EC)	Use limited to professional pest control operators. Outdoor application. Spray outdoor areas, shrubbery and under outbuildings thoroughly. Repeat as needed.
IDAAAAA	Flies (including blowflies, house fly and stable fly)	dry bait 0.04-1.2 oz/ 5,000 sq.ft or wet bait 0.08-0.2 oz/ gal (0.17%, 0.5%, 0.6%, 1% G) --OR MAI-- dry bait 0.01-1.2 oz/ 5,000 sq.ft or wet bait 0.016-0.16 oz/gal (0.25%, 0.1%, 0.5%, 1% G)	Bait application. Apply on ground or areas where flies congregate in and around outdoor living areas, backyard areas (including around flower beds and ornamentals) and patios. OR MAI Formulated with malathion; trichlorfon or ronnel; and chlorpyrifos.

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2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwellings (Outdoor) (continued)		
		dry bait 4-7.2 oz/ 5,000 sq.ft (0.6%, 1% G)	Bait application for maggot control. Apply to areas where flies congregate and breed, especially around refuse containers. Repeat at 7 day intervals or as needed.
		--OR MAI--	OR MAI
		dry bait 4.8-7.2 oz/ 5,000 sq.ft (0.6% G)	Formulated with malathion.
		wet bait 0.12 oz/gal or 0.75 lb/100 gal (2, 4 lb/gal EC)	Use limited to professional pest control operators. Bait application. Apply outside and around entrances and doorways where flies congregate. Mix with powdered sugar.
		-- (0.5% RTU)	Outdoor application. Apply as a coarse, wet spray or apply with a paint brush to areas on outside of house around baseboards, cracks, walls and particularly around cracks of doors and window frames. For the protection and prevention of pests entering dwellings apply as a spot treatment. Thorough and repeat applications should be made to screens, window frames, door sills and other selected areas on porches and patios where pests alight and congregate.
		--OR MAI--	OR MAI
		1:11 dilution (0.23 lb/gal EC)	Formulated with chlorpyrifos.
ILAAACA	Ticks	1 lb/A (50% WP)	Outdoor treatment. Spray infested areas thoroughly.

AQUATIC NONFOOD CROP

General Warnings and Limitations: Dichlorvos is toxic to fish, birds and aquatic invertebrates. Aquatic invertebrates such as shrimp may be killed at recommended rates. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Consult your State Fish and Game Agency before applying dichlorvos to public waters. Permits may be required before treating such waters. Do not contaminate water by cleaning of equipment or disposal of wastes.
Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito adulticide/larvicide on this site (due to toxicity to birds and aquatic organisms).

(Aquatic Sites)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/650380A	Intermittently Flooded Areas, Stagnant Water (Temporary), Catch Basins		
IOAMAAC	Mosquitoes (larvae)	1:200 dilution (2 lb/gal EC) or 1:400-440 (4 lb/gal EC) or 1:260 dilution (50% SC/L) --OR MAI-- 0.01-0.04 lb/A (0.2, 0.23 lb/gal EC) 0.2-1 gal 0.75%, 1%, 1.26%, 4.7% EC/10 gal solvent (0.75%, 1%, 1.26%, 4.7% EC) or 1:220 dilution (50% SC/L) or	Use limited to professional pest control operators or health department or mosquito abatement officials. Outdoor application. Apply as a dilution spot spray to breeding areas. Large areas may be treated by aircraft or ground equipment. OR MAI Formulated with one or a combination of: lindane; methoxychlor; naled; malathion; or tetrachloroethylene.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Intermittently Flooded Areas, Stagnant Water (Temporary), Catch Basins (continued)		
		100 gal 4.7% RTU/A (4.7% RTU)	
		1:10-1:14 dilution (0.5% SC/L)	Use limited to professional pest control operators. Apply by thermal fog generator or mist type sprayer. Formulated with beta-butoxy beta'-thiocyano diethyl ether, propoxur, and malathion.
	(Catch Basins)		
IOAMAAA	Mosquitoes	resin strips 1 strip/catch basin (15%, 20% Impr) or 10 inches of uncut 20% Impr/catch basin (20% Impr)	Insecticidal strip. For the control of mosquitoes breeding in catch basins, suspend 1 strip approximately 10 inches above the water line in each basin. Effectiveness should last 4 to 15 weeks. Replace when effectiveness diminishes.
	(Stagnant Ponds)		
IOAAAFA IOAMAAJ	Gnats Mosquitoes (adults)	0.05 lb/A (20% SC/L)	Fogging application. Envelope total area to be treated with a fog. Pay particular attention to all zones of stagnation.
/650260A	Sewage Plants/Sewage Systems		
IVAAABA	(Cockroaches)	resin strips 1 strip or 10 inches of uncut 20% Impr/manhole (20% Impr)	Insecticidal strip. As an aid to reduction of cockroaches in sewer lateral systems, suspend 1 strip to within 2 feet of the bottom of the manhole. Effective for 1 to 2 months. Replace strip when effectiveness diminishes.
IOBCAAA	Moth flies	1 gal 1.5% EC/100 gal sewage (1.5% EC)	Application to sewage flowing directly to filters. Formulated with mevinphos; dimethrin; and carbaryl.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Sewage Plants/Sewage Systems (continued)		
		0.14 gal 1.5% EC/100 gal sewage (1.5% EC)	Application to sewage in flooded trickling filters. Close the gate to the secondary clarifier and raise the sewage level in the filter to the rock surface. Apply the dosage at a number of points around the sides of the filter. The arms of the filter are allowed to make several revolutions for distribution of the material. The contact period is governed by the extent of infestation; however, the time should never be shorter than 5 hours. At the end of the contact period, the filter can be returned to normal operations, by opening the gate from the filter to the secondary clarifier. Formulated with mevinphos; dimethrin; and carbaryl.
/650330A	Swamps, Marshes, Standing Water, Stagnant Water (Permanent)		
IOAAAFJ IOAMAAJ	Gnats (adults) Mosquitoes (adults)	0.05 lb/A (1% RTU)	Use limited to professional pest control operators. Fog application.
IOAMAAC	Mosquitoes (larvae)	0.1 lb/A (2, 4 lb/gal EC) or 1 pt 50% SC/L/A (50% SC/L)	To be applied by professional pest control operators, health departments and mosquito abatement officials. Outdoor application. Apply in sufficient diluent to cover evenly when applied by aircraft or ground equipment. Repeat as needed. For spot spraying, use at a 1:200 dilution and apply as a coarse spray to breeding areas.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	FORESTRY		
	(Ornamental Plants and Forest Trees)		
/30000AA	Forest Trees		
/90010AA	Gypsy Moth Trap		
/35000AA	Ornamental and/or Shade Trees		
ITAXAIA	(Gypsy moth (adult))	0.25-0.3 g/ trap [4 traps/A] (9%, 9.95%, 10% Impr)	Insecticidal strip intended for use in gypsy moth traps in conjunction with gypsy moth sex pheromone (2-methyl-cis-7,8-expoxyoctadecane) lure. The trap is intended only to monitor the location and population of the gypsy moth. Insert impregnated strip in constructed trap and place 1 trap per 10,000 square feet. The strip will be effective for the entire trapping season.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	INDOOR		

General Warnings and Limitations: When dichlorvos is applied indoor as space spray treatment, post DANGER signs stating: "DANGER. Pesticide treatment in progress. This building should be opened and aired prior to reentry of unprotected workers or remain unoccupied for at least 6 hours after treatment. Do not enter prior to _____ o'clock ___(date)___ without protection." When applied as foggers or indoor space spray, operators must wear a full face mask jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for dichlorvos application under the provisions of 30 CFR Part 11.

	(Agricultural Crops)		
/15006EA	Peanuts (stored)		0.5 ppm - Raw Agricultural Commodities, Nonperishable Bulk Stored, regardless of fat content (postharvest) For aerosol application on bulk-stored peanuts, cover or remove peanuts prior to application.
ITBMALA ITBMCHA	Almond moth Indianmeal moth	25-28 g/ 50,000 cu.ft (2, 4 lb/gal EC) (20% EC)** (20% PrL)	Use limited to professional pest control operators. Ultra low volume application. For use in warehouses. Apply between 5 P.M. and midnight as peanut pests are most active at that time. Use ultra low volume type equipment. Treated warehouses should not be entered for a period of 4 hours after application or until particles have settled. The vapor will give good control of moths and will also kill exposed larvae.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/28037AA	Raw Agricultural Commodities, Non-perishable Bulk Stored (including Animal Feed, Beans (Dried-Type), Cocoa Beans, Coffee Beans, Grain Crops such as Corn, Nut Crops, Peanuts, Peas (Field), Soybeans and Tobacco)		0.5 ppm - Raw Agricultural Commodities, Nonperishable Bulk Stored, regardless of fat content (post-harvest) For aerosol application on bulk-stored peanuts, cover or remove peanuts prior to application.
ITBMALA ITAAAHA ITBMCHA ITBMAIA ITBMBEA	Almond moth Grain moths Indianmeal moth Mediterranean flour moth Tobacco moth	1 strip/1,000 cu.ft (20% Impr)	Insecticidal strip. Suspend 1 strip over the commodities before moths begin to emerge in early spring. Effective for 4 months. Replace strips immediately when effectiveness diminishes to prevent egg laying and growth of larvae.
IMAAAFA	Stored product insects (including cigarette beetle, confused flour beetle, granary weevil, Indianmeal moth, rice weevil, saw-toothed grain beetle and tobacco moth)	50-100 g/ 50,000 cu.ft (5% SC/L)	Use limited to professional pest control operators. Fogging application. Apply in warehouse storage areas, above bulk grain, railroad cars and stationary trucks, food processing areas, flour and grain mills, bakeries, canning and bottling plants and brewery warehouses during time when the plant is not in operation and no food products are exposed. To control exposed stages and the prevention of migration for stored product pests. May be applied by any ultra low volume spray applicator or fogging unit which may be adjusted to deliver small particles. Treatment should be made during the hours when buildings are unoccupied. Buildings should be closed and ventilation kept at a minimum during application of the insecticide. Lock all entrances and do not allow unprotected workers to enter buildings while being treated. Repeat treatment at weekly intervals during season of peak insect activity for optimum results.

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2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/28037AA /43027EA	Raw Agricultural Commodities Non-perishable Packaged or Bagged (including Beans (Dried-Type), Cocoa Beans, Coffee Beans, Grain Crops such as Corn, Nut Crops, Peanuts, Peas and Soybeans)		0.5 ppm - Raw Agricultural Commodities Nonperishable, Packaged or Bagged, containing 6 percent fat or less (post-harvest) 2.0 ppm - Raw Agricultural Commodities Nonperishable, Packaged or Bagged, containing more than 6 percent fat (post-harvest) Treatments must be made during hours when buildings are unoccupied. Food should be removed or covered during treatment. All food processing surfaces must be covered during treatment or thoroughly cleaned before using.
IVAAABA IMAAAFA	Cockroaches Stored product insects (including almond moth, angoumois grain moth, cadelle, cigarette beetle, confused flour beetle, granary weevil, Indianmeal moth, lesser grain borer, Mediterranean flour moth, rice weevil, sawtoothed grain beetle, tobacco moth and yellow mealworm)	50-100 g/ 50,000 cu.ft (20% G)	Use limited to professional pest control operators. For the control of the exposed stages and the prevention of migration of most species of stored product pests. Vapor dispensation. For use in warehouses. Apply by vapor dispenser. 1. Position the machine in the center aisle at 1 end of the warehouse where the volume to be treated is approximately 100,000 cubic feet (75,000 to 125,000 cubic feet). Where larger spaces are to be treated place additional machines down the center aisle at approximately 100,000 cubic feet intervals. 2. Direct the machine so the top distribution fan points down the aisle, not directly toward any nearby object. 3. Set the dial for the correct application number. Do not use the granules for more than the number of applications shown on the dial. 4. Set the timer for 6 hour operation.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Raw Agricultural Commodities Non-perishable Packaged or Bagged (continued)		
		5. For initial application place 30 pounds of 20 percent granular formulation in the machine and level. 6. Wait at least 6 hours after completion of the treatment and remove the granules from the machine and return them to the original airtight shipping container for at least 24 hours prior to the next application. The granules should not be reused more often than once every 24 hours where 1 machine is being used to treat a number of different warehouses. One 6 hour application will treat a space of 75,000 to 125,000 cubic feet and each 30 pounds of 20 percent granular formulation is sufficient for 16 applications, if stored according to the manufacturer's directions.
	50-100 g/ 50,000 cu.ft (5% EC) (5% SC/L) (5% RTU)	Use limited to professional pest control operators. Ultra low volume application. For use in warehouses, railroad cars and stationary trucks, flour mills, grain mills and rice mills. Apply by ULV type machine, adjusted to deliver small particles. 1. Position machine at farthest point from intended exit, if machine is to be moved during treatment, or in center aisle at one end of the warehouse where volume is 100,000 cubic feet or less. 2. Direct nozzle(s) upward and pointed down the aisle, not directly toward any nearby object. 3. Set output by adjusting flow to desired level. 4. Start machine and run for calculated time period. If machine is to be moved around area during treatment, begin backing along

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Raw Agricultural Commodities Non-perishable Packaged or Bagged (continued)		
		pre-calculated path at pre-determined speed. 5. When treatment time has been completed, stop insecticide flow by shutting off valve. Wait until spray stops and then remove machine from area. 6. Wait 6 hours after completion of treatment before ventilating.
	0.5% finished spray [1 fl.oz/ 1,000 cu.ft] (0.5% SC/L) (0.5% RTU)	Use limited to professional pest control operators. Ultra low volume space spray. For use in food warehouses, storage rooms and similar areas. Direct spray into corners, under pallets and around stacks of packaged goods, contacting as many pests as possible. Allow room to remained closed for 1 hour after application. Formulated with MGK 264, piperonyl butoxide, and pyrethrins.
	50 g/50,000 cu.ft (2.95% PrL) or 60 oz 7% PrL/ 50,000 cu.ft (7% PrL)	Use limited to professional pest control operators. Aerosol application. For use in warehouses. Clean out any debris, shut off air conditioners and fans, prior to treatment. Place can upright on floor in center of area to be treated. Snap lock-open nozzle over lip of container. Do not remain in treated areas and ventilate the area after treatment is completed.
	25 g/50,000 cu.ft (20% PrL)	Use limited to professional pest control operators. Aerosol application. As many as 10 units can be wired in a series and activated through use of a single automatic timer.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/26003AA	Tobacco (unfinished, stored)		
INABADA ITBMBEA	Cigarette beetle Tobacco moth	2% finished spray [50-100 g/50,000 cu.ft] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (1.15, 8.39, 10 lb/gal SC/L) (50%, 100% SC/L)	Use limited to professional pest control operators. Space treatment. For use in closed warehouses storing unfinished tobacco only. Dilute with odorless oil or other oil solvents used for diluting insecticides for fogging. Solvents must be non-flammable and known to be safe for use in tobacco warehouses. Repeat as needed.
		--OR MAI--	OR MAI Formulated with 1,1,1-trichloroethane.
		0.5% finished spray (5.38 lb/gal EC) or 0.5% finished spray [40-80 fl.oz/50,000 cu.ft] (5% RTU) or 50 g/50,000 cu.ft (5.5 lb/gal EC)	
		25-50 g/50,000 cu.ft (1.9, 5.8 lb/gal RTU)	Use limited to professional pest control operators. Space treatment. These formulations are specifically formulated for timed and metered aerosol spraying equipment. Use lower rate for air conditioned warehouses. Treated warehouse or factory area must be posted at each entrance for a period of 8 hours . A factory area equipped with air conditioning or other forced ventilation including air washing must be posted for a period of 2 hours provided the air conditioning-air

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Tobacco (unfinished, stored) (continued)		
		washing system reduces the level of dichlorvos concentration in the factory area to below the Threshold Limit Value (TLV) of 1 milligram cubic meter within 2 hours after treatment. If the air conditioning-air washing system does not meet the above TLV standard, the factory must be posted until the concentration of dichlorvos is reduced to 1 milligram per cubic meter (TLV) or less. Dispense between 5 P.M. and midnight only. For air conditioned warehouse or factory dispense between 5 P.M. and 4 A.M. only. One nozzle should be used per 25,000 cubic feet.
	8 fl.oz 10%, 15%, or 20% RTU/24,000 cu.ft (10%, 15%, 20% RTU) --OR MAI-- 50-100 g/ 50,000 cu.ft (50% SC/L) or 25-50 g/ 50,000 cu.ft (0.74, 2.2 lb/gal RTU) (5%, 10% RTU) or 33.3-66.6 fl.oz 10% RTU/50,000 cu.ft (10% RTU)	Space treatment. Apply in thermal fog generator only in tobacco warehouses. Open the metering valve counter-clockwise to the No. 4 setting on the dial. Eight ounces of liquid will be fogged per minute with a mass median diameter of 5 microns. Walk backward down the center aisle of the room swaying the machine back and forth to blanket the entire cubical contents of the room. Length of exposure time is 2 hours with windows and doors closed. After this exposure time, the room should be well ventilated at least 1 hour before re-entering. OR MAI Formulated with 1,1,1-trichloroethane.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Tobacco (unfinished, stored) (continued)		
		25-50 g/ 50,000 cu.ft cu.ft (20%, 40% PrL)	Space treatment. Apply as an aerosol in tobacco warehouses and factories. Apply between 5 P.M. and midnight, as tobacco pests are most active at this time. Several units can be mounted and wired in a series. This enables 2 or more units to be activated simultaneously through the use of a single electrical switch. A single automatic unit activated for 45 seconds will treat approximately 50,000 cubic feet of area at the lower rate. For higher rate, activate for 1.5 minutes. Use lower rate for non-air conditioned factory areas and higher rate for air conditioned factory areas. Treated areas should not be entered for a period of 4 hours after application or until aerosol particles have settled.
INABADA	Cigarette beetle	49.2-49.3 g/ 50,000 cu.ft (0.8, 1.13, 2.2 lb/gal EC)	Use limited to professional pest control operators. Aerosol or thermal fogging application. For use only on stored tobacco in hogsheads or cases in warehouses.
ITBMBEA	Tobacco moth	98.5-98.6 g/ 50,000 cu.ft (0.8, 1.13, 2.2 lb/gal EC)	
/11005EA	Tomato		0.5 ppm (expressed as naled) Postharvest application through 0.01 pound per ton of fruit. Do not use naled on crops that have been treated with dichlorvos.
IOAPABA	Drosophila	0.01 lb/ton of fruit (1% D) (4 lb/gal EC)	Postharvest application. Apply immediately after harvest to thoroughly cover the fruit in lug boxes, hampers or other containers. If treatment can not be made at this time, or if additional fruit damage occurs in transit, retreat-

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Tomato (continued)		
			ment should be made at the receiving station or cannery yard.

(Processed or Manufactured Products, and Food or Feed Containers or Dispensers)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/43027EA	Processed Agricultural Commodities, Nonperishable Packaged or Bagged (including cereals, crackers, flour, packaged cookies and sugar)		Not to be used for hermetically sealed foods or manufactured dairy products and other processed foods requiring refrigeration.

Refer to Raw Agricultural Commodities, Nonperishable Packaged or Bagged for dose and use information.

(Pets and Domestic Animals)

General Warnings and Limitations: When applied as a dip treatment for domestic animals, applicators must wear long-sleeved shirt, long pants, elbow length waterproof gloves, waterproof apron and unlined waterproof boots. Improper dilution of dichlorvos could cause serious injury to pets.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/54002IA	Cats		Do not use on persians or persian cross breeds.
IMNAAAA ILAAACA	Fleas Ticks	flea collar (4.7%, 5% Impr) or isolated flea collar (20% Impr) or flea tag (20% Impr)	Animal treatment. Buckle flea collar securely yet loosely around cats' neck or attach flea tag to the cats' collar with the provided 'S' hook. The isolated flea collar releases vapors only through holes towards the outside of the neck. Effective on fleas for 3 months and on ticks in the neck area only for up to 8 weeks. Effectiveness will be reduced by excessive exposure to water. Remove if cat is bathed. Replace when effectiveness diminishes.

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2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/54003IA	Dogs		
			Do not use on greyhounds or whippets.
IMNAAAA ILAAACA	Fleas Ticks	flea collar (9%, 9.6%, 10% Impr) or isolated flea collar (20% Impr) or flea tag (20% Impr)	Animal treatment. Buckle flea collar securely yet loosely around dogs' neck or attach flea tag to the dogs' collar with the provided 'S' hook. The isolated flea collar releases vapors only through holes towards the outside of the neck. Effective on fleas for 3 months and ticks in the neck area only for up to 8 weeks. Effectiveness will be reduced by excessive exposure to water. Remove collar or tag if dog is bathed. Replace when effectiveness diminishes.
		flea blanket first: spray blanket 6-10 sec for thin coated dogs or 25-33 sec for heavy coated dogs then: rub animal with blanket 3-4 min/body region for short and medium haired dogs or 5-3 min/body region for large or long haired dogs (0.5% PrL)	Animal treatment. Lay provided blanket on the floor with the plastic side down. Spray over the entire surface. Do not spray the animal. After treating the blanket, wrap it around each part or region of the animal's body with the towel side against the coat of the animal. Do not cover the nose or nostrils anytime during the process. Following thorough application, brush the body and shake the blanket well to remove dead fleas and ticks. Make no more than 5 applications within a 21 day period, spaced a minimum of 48 hours apart. Spray blanket for each treatment. Formulated with MGK 264, piperonyl butoxide, and pyrethrins.
IMNAAAA IMAAADA ILAAACA	Fleas Lice Ticks	[W/DIOXATHION] 2.5-5 fl.oz 1% EC/gal (1% EC)	Animal dip or spray treatment. Be sure to treat the inside of ears. Formulated with dioxathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/54003JA	Kennels		
ISASAAA	Ants	0.5% finished spray [1-2 qt/ 1,000 sq.ft] or 1% finished spray [0.5-1 qt/ 1,000 sq.ft] (0.5, 2, 4, 10 lb/gal EC) (15%, 20% EC) (2 lb/gal SC/L) (1%, 50% SC/L) (0.5%, 1% RTU) --OR MAI-- [W/DIOXATHION] hand spray 1 gal 0.54% EC/30 gal [1 gal/1,000 sq.ft] or high pressure spray 1 gal 0.54% EC/60 gal [2 gal/1,000 sq.ft] (0.54% EC) or 1 gal 1% EC/ 10 gal [1 gal/1,000 sq.ft] (1% EC) or	Premise treatment. Apply to outside runways, window sills, ledges, and other surfaces. For brown dog tick and fleas, apply 2 quarts of 0.5 percent or 1 quart of 1 percent finished spray. Sugar may be added to finished sprays for improved house fly control or for prolonged residual action. May be formulated with MGK 264, piperonyl butoxide, and pyrethrins. OR MAI Formulated with dioxathion, ronnel, ciodrin, tetrachlorvinphos, or MGK 264, piperonyl butoxide, and pyrethrins.
ILAMAQA	Brown dog tick		
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IDAAAFA	Gnats		
IDAUAFA	House fly		
IDAMAAA	Mosquitoes		
IIFAAEA	Sowbugs		
IKAAAAA	Spiders		

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Kennels (continued)		
	[W/RONNEL] 0.25% finished spray (0.5 lb/gal EC) or 5 fl.oz 5% EC/gal (5% EC) or 1:19 dilution [0.5 gal/ 1,000 sq.ft] (10% SC/L) or [W/CIODRIN] 0.25% finished spray [2.5 gal/ 1,000 sq.ft] (0.25% RTU) or [W/TETRACHLORVINPHOS] 0.5 pt 5.7% EC/3 gal (5.7% EC) or [W/PYRETHRINS] 0.44% finished spray [1 qt/1,000 sq.ft] (0.44% RTU)	

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Kennels (continued)		
	dry bait 0.01-0.04 oz/1,000 sq.ft (0.5%, 0.6%, 1% G) or wet bait 0.08-0.16 oz/gal [1 qt/1,000 sq.ft] (0.5%, 0.6%, 1% G) --OR MAI-- [W/PROPOXUR] 0.003 oz/1,000 sq.ft (0.043% G) or [W/MALATHION] 0.01 oz/1,000 sq.ft (0.5% G) or [W/PHENOTHRIN, MALATHION] 1 oz/1,000 sq.ft (0.5% G) or [W/TRICHLORFON] dry bait 0.1 oz/1,000 sq.ft (0.25% G) or	Premise treatment. Apply dry or wet baits to outside runways, window sills, ledges, and other surfaces. OR MAI Formulated with propoxur, formaldehyde, malathion, trichlorfon, ronnel, alkyl* dimethyl benzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14), or alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18).

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Kennels (continued)		
	[W/RONNEL] dry bait 0.003-0.008 oz/1,000 sq.ft or wet bait 0.016-0.02 oz/gal/1,000 sq.ft (0.1%, 0.5% G)	
	[W/CIODRIN] dry bait 0.024 oz/ 1,000 sq.ft or wet bait 0.192 oz/gal (0.6% G)	Premise treatment. Sprinkle lightly as a dry or wet sugar bait. Apply wet bait to burlap and suspend out of reach of animals. Formulated with ciodrin.
	[W/TRICHLORFON] bait cakes [1 0.25% P/T/100 sq.ft of indoor areas] (0.25% P/T)	Premise treatment. Place inside buildings or outside along fences out of reach of animals. Formulated with trichlorfon.
	total release aerosol 10-12.5 fl.oz 0.5% PrL/ 10,000 cu.ft (0.5% PrL) or 12 fl.oz 2.95% or 7% PrL/10,000 cu.ft (2.95%, 7% PrL)	Premise treatment. Set aerosol can on a chair or stand. To start fogging action press plastic valve down until it clicks. Set in upright position and leave area undisturbed for at least 2 hours. Ventilate for a minimum of 2 hours. May be formulated with one or a combination of d-trans allethrin, propoxur, MGK 264, ronnel, piperonyl butoxide, pyrethrins, phenothrin, and methoprene.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Kennels (continued)		
ILAMAQA	Brown dog tick	[W/PROPOXUR, DIAZINON] ready to use (0.2% RTU) or pressurized spray (0.2% PrL)	Premise treatment. Apply to outside runways and around window frames. Formulated with propoxur or diazinon.
IMNAAAA	Fleas	[W/CIODRIN] 0.5 pt 4.498% EC/25 gal/ 1,000 sq.ft (4.498% EC)	Outdoor premise treatment. Apply with a hose type sprayer. Saturate soil or suspected area thoroughly. Formulated with ciodrin.
IOAAAAA IOAAAFA IOAMAAA IMPBACA	Flies Gnats Mosquitoes (Silverfish (reduction of populations))	resin strips 0.7-3.7 oz 20% Impr strips [1 strip/ 1,000 cu.ft or 100 sq.ft of floor area] (15%, 20% Impr)	Premise treatment. Suspend strips evenly over the treatment area. Weather and other conditions such as strong drafts may alter performance. Treatment is usually effective for 1 season (up to 4 months). Replace if effectiveness diminishes.
/51000JA	Furbearing Animal Units		
IOAAAAA	Flies	0.02 oz/1,000 sq.ft (0.5% G) (0.5% P/T) --OR MAI-- [W/TRICHLORFON] 0.01 oz/1,000 sq.ft (0.25% G)	Premise treatment. Apply lightly to floor, aisles, window sills, ledges, and on the ground near entrances particularly to the feed storage room. OR MAI Formulated with trichlorfon.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Furbearing Animal Units (continued)		
		[W/TRICHLORFON] bait cakes [1, 0.25% P/T/100 sq.ft of indoor area] (0.25% P/T)	Premise treatment. Place inside buildings or outside along fences out of reach of animals. Formulated with trichlorfon.
/51006JA /51006KA	Mink Ranches		
IDAAAAA	Flies	0.5% finished spray [2 qt/100 sq.ft of droppings] and [1 qt/1,000 sq.ft of premises] (18.5% EC)	Premise and manure application. Apply to cages, framework, and surrounding areas. Repeat at 7 day intervals.
/51008JA	Rabbits on Wire		
IDAAAAA	Flies	0.096-0.144 oz/100 sq.ft of wet areas (0.6% G)	Premise treatment. Scatter on manure, in feed rooms and other places where flies settle.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	(Animals and Their Man-Made Premises)		
/53001IA /50002IA /53002IA /53003IA /53005IA /53006IA	Beef Cattle Dairy Cattle Goats Horses (including ponies) Sheep Swine		0.02 ppm milk cattle (meat, fat, meat byproducts) goats (meat, fat, meat byproducts) horses (meat, fat, meat byproducts) sheep (meat, fat, meat byproducts) 0.1 ppm swine (meat, fat, meat byproducts) 20 minute premilking interval through 2 fluid ounces per animal per day. No preslaughter interval through 2 fluid ounces of a 1 percent finished spray per animal per day (dairy cattle, beef cattle, horses) or 1 ounce per animal per day (goats, sheep, swine). Do not apply to calves under 6 months of age. Brahman cattle and Brahman cattle crosses should not be treated as they may show hypersensitivity to organic phosphates. Do not use in combination with trichlorfon.
ILAQAFA IMAAADA ILAAACA	Chorioptic mange mite Lice Ticks	[W/CIODRIN] 1 gal 1%, 1.07% EC/50 gal [1-2 qt/animal] (1%, 1.07% EC) or 2.5 pt 2.5%, 2.51% EC/16 gal or 1 qt 5% EC/26 gal [up to 1 gal/animal] (2.5%, 2.51%, 5% EC) or	Animal spray treatment. Make 1 to 2 applications at 14 days apart. Make additional applications as needed, but not more than every 7 days. Formulated with ciodrin.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Beef Cattle cluster (continued)		
		1.06-1.7 pt 3.75% EC/16 gal [1 gal/animal and 0.5 gal/smaller animals] (3.75% EC)	
IOAUAEA IOAAAFA IOAUADA IOAUAFA IOAMAAA IOAUAHA IOBKAAA	Face fly Gnats Horn fly House fly Mosquitoes Stable fly Tabanid flies	0.5 or 1% finished spray [1-2 fl.oz/animal] (0.875% WP) (0.5, 1.4, 2, 4 lb/gal EC) (2.5%, 4.24%, 15%, 18.5%, 20%, 23.4% EC) (8, 8.4, 10 lb/gal SC/L) (1%, 1.09%, 2.5%, 50% SC/L) (0.5%, 1% RTU) --OR MAI-- [W/CIODRIN] 0.2-1% finished spray or 1 gal 1% EC/7 gal [1-2 fl.oz/animal] (0.85 lb/gal EC) (1% EC) (0.2%, 0.5%, 1% RTU) or	Animal mist spray treatment. Sugar may be added to the finished spray. Apply as a finely atomized spray uniformly distributed over each animal. Apply 1 to 2 fluid ounces per animal for cattle and horses and 1 fluid ounce for goats, sheep and swine. Reduce rate by one-half for young animals. Applications may be timed so as to be applied in the early morning and late evening but not to exceed maximum allowed per animal per day. Spray each animal from the rear, directing the spray along both sides, including the belly, flanks, and withers, down each leg, over the back and around the poll, so as to deposit droplets on the hair. Do not wet the hide. Tabanid flies must be hit directly by the spray. OR MAI Formulated with one or a combination of: MGK Repellent R-11, MGK 326, MGK 264, ciodrin, piperonyl butoxide, and pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Beef Cattle cluster (continued)		
		[W/PYRETHRINS] 0.194%-0.5% finished spray [1-2 fl.oz/animal] (0.194%, 0.2%, 0.2005%, 0.25%, 0.44%, 0.5% RTU)	
IOAUAEA IOAUADA IOAUAFA IMAAADA ILAMACA IOAUAHA	Face fly Horn fly House fly Lice Lone star tick Stable fly	[W/CIODRIN] 2 qt 2.5%, 2.51% EC/12 gal or 1 qt 5% EC/12 gal [1-2 qt/large animal, proportionately less for smaller animals] (2.5%, 2.51%, 5% EC)	Animal spray treatment to animals in pens or corrals. Formulated with ciodrin.
IMAAADA	Lice	[W/PYRETHRINS] 0.2% finished spray [approximately 2.5 fl.oz/animal] (0.2005% RTU)	Animal spray treatment. Spray the hair of the animal thoroughly, paying special attention to the neck, shoulders, and the area around the tail. Do not wet the hide as blistering may result. Formulated with piperonyl butoxide and pyrethrins.
IMAAADA	Lice (including eggs and larvae)	0.307% finished spray [approximately 2.5 fl.oz/animal] (0.307% RTU)	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Beef Cattle cluster (continued)		
/53001IA	(Beef Cattle)		
IOAUAEA IOAUADA	Face fly Horn fly	[W/DIOXATHION] pour on 1 gal 0.54% EC/24 gal [1 qt/animal] (0.54% EC) or [W/CIODRIN] pour on 1 gal 1%, 1.07% EC/14 gal [1 qt/animal] (1%, 1.07% EC)	Animal treatment. Apply by pouring diluted emulsion along the backline of the animal. Repeat at 7 day intervals. Formulated with dioxathion or ciodrin.
IOAAAAA	(Flies)		
IMAAADA	Lice (tail and face)	[W/TETRACHLORVINPHOS] 1 pt 5.7% EC/10 gal [0.5-1 gal/animal] (5.7% EC)	Animal spray treatment. Formulated with tetrachlorvinphos.
IOAUADA	Horn fly	1 pt 5.7% EC/25 gal (5.7% EC)	
ILAMACA	Lone star tick	1 pt 5.7% EC/6 gal (5.7% EC)	
IOAUADA	Horn fly	[W/DIOXATHION] 1 gal 0.54% EC/9 gal (0.54% EC)	Animal back rubber treatment. Formulated with dioxathion.

Beef Cattle cluster (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/53001IA	(Beef Cattle)		
/50002IA	(Dairy Cattle)		
IOAUAEA	Face fly	0.25% finished spray [1 gal/20 linear ft of burlap rubbers] (0.25% RTU) or 1 gal 1%, 1.07% EC/18 gal (1%, 1.07% EC) or 1 qt 2.5%, 2.51% EC/4 gal (2.5%, 2.51% EC) or 1 pt 3.75% EC/2.5 gal (3.75% EC) or 1 pt 5% EC/4 gal (5% EC) or 1 pt 5.7% EC/3.5 gal (5.7% EC) or 1:3 dilution 0.25% SC/L (0.25% SC/L (0.25%, 2.5% SC/L) or 1:9 dilution 2.5% SC/L [1 face oiler/50 head] [1 backrubber/50 head] (0.25%, 2.5% SC/L)	Animal backrubber/face oiler treatment. Do not allow animals to use a backrubber saturated to the point of runoff. Animals must rub their faces on the backrubbers for face fly control. Generally use backrubbers for horn fly and face oilers for face fly. The face oiler must be so designed that 1 end is not more than 15 to 20 inches above the ground to allow cattle to rub their faces. Sheet canvas type face oilers should be located at barn door openings, in loafing areas or around salt licks where animals may freely treat themselves as needed for face fly control.
IOAUADA	Horn fly		

Beef Cattle cluster (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
IOAUAEA	Face fly	0.5% bait slurry [3-5 ml/face] (0.5% G) (4 lb/gal EC)	Animal face paint treatment. With a 0.75 to 1 inch paint brush, stroke a 6 inch line to animals' face or forehead between the eyes. Apply early in the morning for 14 days and thereafter as needed.
		[W/CIODRIN] 0.5% finished spray or 10.66 fl.oz 2.5%, 2.51% EC/gal or 5.33 fl.oz 5% EC/gal [5 tsp/face] [5-10 tsp/back and sides] (0.85 lb/gal EC) (2.5%, 2.51%, 5% EC)	Animal low volume spray treatment. Make 3 applications per 7 days. Sugar may be added to spray. Formulated with ciodrin.
IOAUAEA IOAUADA IOAUAHA	Face fly Horn fly Stable fly	[W/CIODRIN] 0.05% finished spray [2 fl.oz/animal] (1.07% EC)	Animal mist spray treatment. Formulated with ciodrin.
		1 gal 1% EC/14 gal [1-2 pt/animal] (1% EC)	Animal wet spray treatment. Formulated with ciodrin.
IMAAADA	Lice	[W/CIODRIN] 0.25% finished spray [3-3.5 fl.oz/animal or 20 sec/animal] (0.25% RTU)	Animal treatment. Apply with fogging or misting equipment. Make 1 to 2 applications timed 14 days apart. Make additional applications as needed, but not more often than every 7 days. Formulated with ciodrin.

Beef Cattle cluster (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/53001IA /53003IA IOAUADA IMAAADA	(Beef Cattle) (Horses) Horn fly Lice Ticks (including cattle tick, ear ticks, Gulf Coast tick, lone star tick)	[W/DIOXATHION] 1 qt 0.54% EC/25 gal [2 qt/animal] (0.54% EC)	Animal spray treatment. Formulated with dioxathion.
/53001IA /53005IA ILASADA	(Beef Cattle) (Sheep) Itch mite	[W/TOXAPHENE] 1 gal 1.5% EC/80 gal (1.5% EC)	Animal spray or dip treatment. Apply in dipping vats or with spray/ dip machines. Formulated with toxaphene.
/53002IP /53005IA IMAAADA IOATABA IOAGABA	(Goats) (Sheep) Lice Sheep ked Wool maggots	[W/DIOXATHION] 1 qt 0.54% EC/25 gal (0.54% EC)	Animal spray or dip treatment. Formulated with dioxathion.
/53003IA IOAAAAA	(Horses (including ponies)) Flies	[W/PYRETHRINS] pressurized spray not in excess of 2 fl.oz/ animal [approximately 1.5-2 sec spraying time] (0.25% PrL)	Animal spray treatment. Formulated with stabilene, MGK 264, ciodrin, piperonyl butoxide, and pyrethrins.
/53006IA IMBBAEA	(Swine) Hog louse	[W/DIOXATHION] 1 qt 0.54% EC/25 gal (0.54% EC)	Animal spray treatment. Formulated with dioxathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/55000KA	Caged Poultry (manure treatment)		0.05 ppm (N) eggs poultry (meat, fat, meat byproducts)
/55027KA	Turkeys on Wire (manure treatment)		
/55028KA			
IOAAAAC	Maggots	0.02 oz/100 sq.ft or 0.13 oz/gal [0.5 gal/100 sq.ft] (0.5%, 1% G) or 0.5% finished spray [0.5 gal/100 sq.ft] (2 lb/gal EC) --OR MAI-- [W/DIMETHOATE] 1 gal 1.5% EC/20 gal (1.5% EC) or [W/TRICHLORFON] 0.01 oz/100 sq.ft (0.25% G) or bait cakes 1 0.25% P/T/dropping pit (0.25% P/T) or [W/RONNEL] 0.25% finished spray (0.5 lb/gal EC) or [W/ORTHODICHLOROBENZENE] 1 gal 3.2% EC/48 gal (3.2% EC)	Apply to droppings beneath cages or perches. Repeat at 7 day intervals. Apply finished spray as a coarse wet spray until manure is thoroughly penetrated. OR MAI Formulated with dimethoate, trichlorfon, ronnel, or orthodichlorobenzene.

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/55013IA	Chickens, Broilers		0.05 ppm (N) poultry (meat, fat, meat byproducts) No preslaughter interval.
ILAHABA IMAAADA	Chicken mite Lice	1 pt 5.7% EC/6 gal [1-2 gal/ 1,000 sq.ft (5.7% EC)	Premise treatment with poultry present. Apply evenly with penetration of litter surface. Also apply thoroughly to walls, roosts, cracks and crevices. Spray birds lightly. May be formulated with tetrachlorvinphos.
/53014IA	Chickens, Layers		0.05 ppm (N) eggs poultry (meat, fat, meat byproducts) No preslaughter interval.
ILAHABA IMAAADA	Chicken mite Lice	1 pt 5.7% EC/6 gal [1 gal/100 birds] or [1 fl.oz/ bird] (5.7% EC)	Animal treatment, caged chickens. Apply to the vent and fluff areas from below. Repeat when necessary, not more than every 14 days. Treat roosters carefully to avoid reinfestation of breeding flocks. May be formulated with tetrachlorvinphos.
ILAHABA IMAAADA ILAOADA	Chicken mite Lice Northern fowl mite	resin strips 1 strip/row of cages, lengthwise and continuously (20% Impr)	Premise treatment. Fasten to cages with paper clips or other suitable fastener.
		[W/PYRETHRINS] 0.25% finished spray (0.25% RTU)	Premise treatment. Spray roosts and empty nests prior to spraying, paying particular attention to all cracks and crevices and other hidden places. Thoroughly clean premises before spraying. Repeat at 14 day intervals. Spray entire interior of the coop and house thoroughly. Formulated with piperonyl butoxide and pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Chickens, Layers (continued)		
IOAAAAA	Flies	1% pressurized spray with curtains closed 0.59 sec/1,000 cu.ft or with curtains open 10 sec/1,000 cu.ft (1% PrL)	Premise treatment with poultry present. Aerosol application. For use in caged laying houses equipped with an aerosol piping system and an automatic timing system. Make only 1 application daily. Timer should be changed when curtains are raised or covered to coincide with dosages. Nozzles are to be strategically located and directed in the gable of the caged laying house so as to give complete coverage in the gable area where the air circulation is at a minimum and flies congregate, especially in the late afternoon. Do not place nozzle within 5 feet of food, water or fowl.
/55008IA	Turkeys		0.05 ppm (N) poultry (meat, fat, meat byproducts) No preslaughter interval.
ILAWACA	Turkey chigger	1 band/bird (15% Impr)	Animal treatment. Apply 5 to 6 weeks before intended marketing. Place 1 band around 1 leg of each bird. Fasten with a suitable plier (such as hog ring pliers) loosely but such that the band will not slide over the foot. Before allowing birds to be processed remove band by cutting with shears.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/50000KA	Dairy Premises (manure treatment)		0.02 ppm milk cattle (meat, fat, meat byproducts) goats (meat, fat, meat byproducts) horses (meat, fat, meat byproducts) sheep (meat, fat, meat byproducts) 0.1 ppm swine (meat, fat, meat byproducts)
/52000KA	Farm Premises (manure treatment)		
/89003OA	Garbage Dumps (dairy and farm premises)		
10AAAAC	Maggots	0.5% finished spray [1-2 qt/100 sq.ft] or 1% finished spray [0.5-1 qt/ 100 sq.ft] (0.5, 1.4, 4 lb/gal EC) (0.94%, 1%, 15%, 18.5%, 20%, 23.9%, 43.5% EC) (8, 8.4, 10 lb/gal SC/L) (1%, 15%, 50% SC/L) (0.5%, 1% RTU) --OR MAI-- [W/DIMETHOATE] 1 gal 1.5% EC/20 gal (1.5% EC) or [W/CIODRIN] 0.25% finished spray [0.5-1 qt/ 100 sq.ft] (0.25% RTU) or	Manure treatment. Apply as a coarse wet spray or apply with sprinkling can. Repeat application as manure or garbage is added. May be formulated with lindane, dimethoate, tetrachlorvinphos, or piperonyl butoxide and pyrethrins. OR MAI Formulated with dimethoate, ciodrin, or tetrachlorvinphos.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Dairy Premises (manure treatment) cluster (continued)		
		[W/TETRACHLORVINPHOS] 1 pt 5.7% EC/3 gal [1 gal/100 sq.ft] (5.7% EC)	
		0.08-0.12 oz/100 sq.ft (0.5%, 1% G)	Manure treatment. For small mounds apply on the sides as well as the top. Repeat at 5 to 7 day intervals or as additional manure accumulates or refuse added. May be formulated with malathion or ronnel.
		--OR MAI--	OR MAI
		[W/RONNEL] 0.032-0.04 oz/100 sq.ft (0.1%, 0.5% G)	Formulated with ronnel.
/50003JA	Dairy Rooms, Milkhouses		0.02 ppm (N) milk
IOAAAAA	Flies	[W/PYRETHRINS] 0.5% finished spray [1 qt/8,000 cu.ft] (0.5% RTU) or 0.5% pressurized spray (0.5% PrL)	Premise treatment. Apply to windows, doors, ceilings as needed. Formulated with piperonyl butoxide and pyrethrins.

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/52000JA /53003JA	Farm Buildings (including dairy barns, milk sheds, stables, livestock barns, loafing sheds, pig pens, feed lots, feed rooms, and outdoor areas)		0.02 ppm (N) milk cattle (meat, fat, meat byproducts) goats (meat, fat, meat byproducts) horses (meat, fat, meat byproducts) sheep (meat, fat, meat byproducts) 0.1 ppm (N) swine (meat, fat, meat byproducts) Before applying sprays in enclosed areas, reduce air movement as much as possible by closing doors, windows, and other openings. Do not contaminate water, feed, or food stuffs, milk or milking utensils.
ISASAAA IVAAABA IOAUAEA IMNAAAA IOAAAFA IOAUADA IOAUAFA IOAMAAA IOAUAHA	Ants Cockroaches Face fly Fleas Gnats Horn fly House fly Mosquitoes Stable fly	0.5% finished spray [1 qt/1,000 sq.ft or 1% finished spray [1 pt/1,000 sq.ft] (0.5, 0.85, 1.4, 2, 4 lb/gal EC) (1.07%, 15%, 18.5%, 20%, 23.4% EC) (2 lb/gal SC/L) (1%, 50%, 90% SC/L) (0.5%, 1% RTU) --OR MAI-- [W/RONNEL] 1:19 dilution [1 qt/1,000 sq.ft (10% SC/L) or	Premise treatment. Apply as a coarse, wet spray. Apply around doorways, feed storage rooms, alleyways, and window sills. Sugar or corn syrup may be added to finished sprays for improved face fly, horn fly, and house fly control or for prolonged residual action. May be formulated with tetrachlorvinphos, or ciodrin, or pyrethrins and one or a combination of MGK 326, MGK 264, and piperonyl butoxide. OR MAI Formulated with ronnel, ciodrin, or tetrachlorvinphos.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Farm Buildings (continued)		
	0.25% finished spray [1-2 gal/1,000 sq.ft] or 0.5% finished spray (0.5 lb/gal EC) or [W/CIODRIN] 1 gal 1% EC/25 gal [to runoff] or 2 qt 2.5%, 2.51% EC/6 gal or 1 pt 3.75% EC/6 gal or 1 qt 5% EC/6 gal [1 gal/1,000 sq.ft] (1%, 2.5%, 2.51%, 3.75%, 5% EC) or [W/TETRACHLORVINPHOS] 0.2 or 0.5% finished spray [1-2 gal/1,000 sq.ft] (0.5 lb/gal EC)	

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Farm Buildings (continued)		
	[W/DIMETHOATE] 2 qt 1.5%, 2.5% EC/12.5 gal [1-2 gal/ 1,000 sq.ft] (1.5%, 2.5% EC)	Premise treatment. Apply as a residual wall or general outdoor spray. Apply to the point of runoff. Formulated with dimethoate.
	[W/DIMETHOATE] 2 qt 1.5% EC/10 gal (1.5% EC)	Premise treatment. Apply as a spot spray to doorways and windows. Formulated with dimethoate.
	dry bait 0.01-0.04 oz/ 1,000 sq.ft or wet bait 0.04-0.08 oz/ gal [1 qt/1,000 sq.ft] (0.25%, 0.5%, 1%, G) --OR MAI-- [W/MALATHION] dry bait 0.01 oz/1,000 sq.ft (0.5%, 6% G) or [W/RONNEL] dry bait 0.004-0.04 oz/1,000 sq.ft (0.1%, 0.25%, 0.5%, 0.6% G) or	Premise treatment. Dry bait: scatter where flies are seen, every 2 to 3 days. OR Wet bait: Paint or spray walls, sprinkle or spray on floor and ground areas such as doorways, feed rooms, and alleyways where flies congregate. OR Bait stations: If there are no suitable surfaces, or where floors have been freshly limed, spray wet bait on cardboard, burlap, or paper towels. Place on metal or paper plates. Arrange bait stations every 15 feet. OR MAI Formulated with malathion or ronnel.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Farm Buildings (continued)		
	wet bait 0.016-0.192 oz/gal [0.5-2 qt/ 1,000 sq.ft] (0.1%, 0.25%, 0.5%, 0.6% G)	
	[W/TRICHLORFON] dry bait 0.02 oz/1,000 sq.ft or syrup bait 0.64 oz/gal [brush on 1-3 gal/ 1,000 sq.ft] (0.5% G) or bait cakes [1, 0.25% P/T/100 sq.ft of indoor areas] (0.25% P/T)	Premise treatment. Apply pelleted/tableted formulation indoors at the rate of 1 cake per 100 square feet and outdoors along rafters on top of bulk feeders and along fences where animals cannot lick them. Formulated with trichlorfon.
	0.02 oz/1,000 sq.ft (0.5% G) or 0.04 oz/1,000 sq.ft (1% G)	Outdoor premise treatment. Apply to feed lots. May be formulated with propoxur or ronnel.
	--OR MAI--	
	[W/PROPOXUR] 0.0034 oz/ 1,000 sq.ft (0.043% G) or [W/RONNEL] 0.008 oz/ 1,000 sq.ft (0.1% G)	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Farm Buildings (continued)		
IMNAAAA	Fleas	[W/CIODRIN] 0.25% finished spray (0.25% RTU) or 1% finished spray [5 fl.oz/ 1,000 sq.ft] (1% RTU)	Premise treatment. Spray bedding and sleeping quarters where infested animals are housed. Formulated with ciodrin.
IOAAAAA	Flies	0.5% or 1% finished spray [1 qt 0.5% or 0.5 qt 1% finished spray/8,000 cu.ft] (2, 4 lb/gal EC) (15%, 18.5%, 23.4% EC) (8, 8.4, 10 lb/gal SC/L) (1.09%, 15%, 50% SC/L) (0.5%, 1% RTU) --OR MAI-- [W/CIODRIN] 0.25% or 1% finished spray [0.5-1 pt/ 8,000 cu.ft] (0.25%, 1% RTU) or	Animal treatment. Barn fogging with animals present. Prior to application reduce air movement as much as possible by closing doors, windows, and other openings. Apply with automatic fogging equipment or direct fog from the outside into the enclosure. Do not apply if animals have had a direct application within 8 hours. May be formulated with one or a combination of MGK Repellent R-11, MGK 326, MGK 264, ciodrin, piperonyl butoxide, and pyrethrins. OR MAI Formulated with ciodrin or pyrethrins.

Farm Buildings (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
		[W/PYRETHRINS] 0.2%, 0.25%, 0.44% or 0.5% finished spray [0.5-1 qt/8,000 cu.ft] (0.194%, 0.2%, 0.2005%, 0.25%, 0.44%, 0.5% RTU)	
		0.5% finished spray [4.66-5 gal/A] (1.4, 2, 4 lb/gal EC) (18.5%, 20%, 43.2% EC) (8, 8.4, 10 lb/gal SC/L) (50% SC/L) or 1% finished spray [2.5 gal/A] (1% RTU)	Outdoor premise treatment. Animals may be present. Apply with a mist blower or other suitable equipment as an overhead application. Direct the spray over the entire area such as fences, spillage areas, around feed bunks and walls of buildings. Sugar may be added to the finished spray.
IOAAAAA IOAAAFA IOAMAAA IMPBACA	Flies Gnats Mosquitoes Silverfish (reduction of population)	resin strips 3.3 oz 15% Impr or 1.3-3.7 oz 20% Impr strips 1 strip/1,000 cu.ft or 100 sq.ft of floor area (15%, 20% Impr)	Premise treatment. Suspend strips evenly over the treatment area. Weather and other conditions such as strong drafts may alter performance. Treatment is usually effective for 1 season (up to 4 months). Replace if effectiveness diminishes.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Farm Buildings (continued)		
		resin strips 30 linear ft/ 100 sq.ft (20% Impr)	Premise treatment. Loop the strand over rafters or staple to ceiling. Weather and other conditions such as strong drafts may alter performance. Treatment is usually effective for 1 season (10 weeks). Replace if effectiveness diminishes.
IDAAAFA IDAUAFA IDAMAAA IKAAAAA IDAUAHA	Gnats House fly Mosquitoes Spiders Stable fly	[W/TETRA-CHLORVIN-PHOS] 0.5 pt 5.7% EC/1.5 gal or for extreme infestation 0.5 pt 5.7% EC/0.75 gal [1-2 gal/ 1,000 sq.ft] (5.7% EC)	Premise treatment. Formulated with tetrachlorvinphos.
ISAAADA	Wasps	[W/TETRA-CHLORVIN-PHOS] 0.5 pt 5.7% EC/1.5 gal or for extreme infestation 0.5 pt 5.7% EC/0.75 gal (5.7% EC)	Premise treatment. Thoroughly drench nests in the evening when wasps are quiet or when they are away from their nests. Formulated with tetrachlorvinphos.
IDAAAAC	Maggots	[W/TETRA-CHLORVIN-PHOS] 0.5 pt 5.7% EC/1.5 gal [1 gal/100 sq.ft] (5.7% EC)	Premise treatment. Apply to old wet straw in box stalls, under or around feed troughs, or similar fly breeding areas. Formulated with tetrachlorvinphos.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/53003JA	Horse Barns		0.02 (N) horses (meat, fat, meat byproducts)
IOAAAAA	Flies	[W/DIMETHOATE] 0.94% EC in diesel oil 1:16 [1-2 gal/1,000] (0.94% EC)	Premise treatment. Residual spray. Animals must be removed prior to spraying. Formulated with dimethoate.
		[W/DIMETHOATE] 0.94% EC in diesel oil 1:16 (0.94% EC)	Outdoor premise treatment. Apply to exposed areas including fences, walls and manure piles. Formulated with dimethoate.
		[W/DIMETHOATE] 0.94% EC in diesel oil 1:12 (0.94% EC)	Premise treatment. Spot spray in feed rooms, doorways, windows, and alleyways. Formulated with dimethoate.
		[W/PYRETHRINS] 1-3% finished spray [1 pt/8,000 cu.ft] (50% SC/L) (1% RTU)	Fog application. Apply with hand spray, power sprayer, electric fogging or misting equipment. May be formulated with MGK 264, piperonyl butoxide, and pyrethrins.
		[W/PYRETHRINS] 0.44% finished spray [1.5 qt/1,000 sq.ft] (0.44% RTU) or 1% finished spray [0.75 qt/1,000 sq.ft] (1% RTU)	Premise spray. Apply to walls, floors, and cracks where infestations occur. May be formulated with MGK 264, piperonyl butoxide, and pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Horse Barns (continued)		
		[W/PYRETHRINS] 0.2% space spray (0.2% PrL)	Space spray. Exposure period 15 minutes. Formulated with MGK Repellent R-11, MGK 264, piperonyl butoxide, and pyrethrins.
		total release 10-12.5 fl.oz/10,000 cu.ft (0.5% PrL)	Formulated with propoxur; d-trans allethrin and phenothrin; or MGK 264, piperonyl butoxide, and pyrethrins.
		[W/PYRETHRINS] 0.5% pressurized spray (0.5% PrL)	Premise treatment. Apply to pest resting places such as windows, doorways, ceilings, and walls of animal pens. Formulated with piperonyl butoxide and pyrethrins.
		Refer to Farm Buildings for additional information.	
/55001JA	Poultry Houses		0.05 (N) eggs poultry (meat, fat, meat byproducts)
ISASAAA IVAAABA IMNAAAA IDAAAAA IDAAAFA IDAMAAA IKAAAAA	Ants Cockroaches Fleas Flies Gnats Mosquitoes Spiders	0.5% finished spray [1 qt/1,000 sq.ft] or 1% finished spray [1 pt/1,000 sq.ft] (0.5, 2, 4 lb/gal EC) (18.5%, 20% EC) (1% SC/L) (0.5%, 1% RTU) or	Premise treatment. Apply to manure, window sills, outside of penned enclosures, and floors of feed rooms. Sugar may be added to finished sprays for improved house fly control or for prolonged residual action. May be formulated with ronnel or pyrethrins and one or a combination of MGK 264 and piperonyl butoxide. OR MAI Formulated with tetrachlorvinphos.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Poultry Houses (continued)		
	--OR MAI-- [W/TETRACHLORVINPHOS] 0.24-0.48% finished spray [1-2 gal/1,000 sq.ft] (5.7% EC)	
	dry bait 0.02-0.04 oz/1,000 sq.ft or wet bait 0.08-0.16 oz/gal [1 qt/1,000 sq.ft] (0.25%, 0.5%, 0.6%, 1% G)	Premise treatment. Dry bait: Apply every 3 to 5 days where *flies* are seen. OR Wet bait: Apply with a sprinkling can or as a coarse wet spray to floor areas, window sills, walls or other areas where flies are seen. May be formulated with ronnel or trichlorfon. OR MAI
	--OR MAI-- [W/MALATHION] 0.01 oz/1,000 sq.ft (0.5% G)	Formulated with malathion.
	[W/PROPOXUR] 0.034 oz/1,000 sq.ft (0.043% G)	Premise treatment. For broiler houses and walkways of caged layer houses. Formulated with propoxur and muscalure.
	[W/RONNEL] dry bait 0.002-0.04 oz/1,000 sq.ft (0.1%, 0.25%, 0.5%, 0.6%, 1% G) or	Premise treatment. For caged laying operations. Formulated with ronnel.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Poultry Houses (continued)		
		wet bait 0.16-0.192 oz/gal [0.5-2 qt/ 1,000 sq.ft] or 0.04 oz/gal/ 1,000 sq.ft (0.1%, 0.25%, 0.5%, 0.6%, 1% G)	
IDAAAAA IDAAAFA IDAMAAA IMPBACA	Flies Gnats Mosquitoes (Silverfish (reduction of population))	resin strips 1.3-3.7 oz 20% Impr strips 1 strip/ 1,000 cu.ft or 100 sq.ft of floor area (20% Impr)	Premise treatment. Suspend strips evenly over the treatment area. Weather and other conditions such as strong drafts may alter performance. Treatment is usually effective for 1 season (up to 4 months). Replace if effectiveness diminishes.
IDAAAAA	Flies	0.5% finished spray [1 qt/8,000 cu.ft] (2 lb/gal EC)	Premise treatment. Fog application. Apply with any suitable fogger for all types of poultry housing.
ILACABA	Fowl tick (blue bug)	[W/TETRA-CHLORVIN-PHOS] 1 pt 5.7% EC/3 gal [0.66-1 gal/ 100 sq.ft] (5.7% EC)	Premise treatment. Apply to cover walls, ceiling, floors, cracks, and crevices using high pressure spray. Formulated with tetrachlorvinphos.
IMAAADA ILAAABA	Lice Mites	[W/TETRA-CHLORVIN-PHOS] 1 pt 5.7% EC/3 gal [1 pt/100 sq.ft roost area] (5.7% EC)	Roost paint. Apply with brush or spray. Formulated with tetrachlorvinphos.

Poultry Houses (continued)

Refer to Caged Poultry (manure treatment) cluster for additional use information.

(Household)

General Warnings and Limitations: Remove occupants, pets, birds, and remove or cover fish aquariums before application. Food should be removed and food handling equipment covered during application and/or washed after application is complete. Leave undisturbed for at least 2 hours. Before reoccupying, open all doors and windows and ventilate thoroughly. Do not allow children to lie or sleep in treated areas until at least 6 hours following treatment. Open doors and windows and allow to air for 30 minutes. Prior to application eliminate all sources of ignition (pilot lights, fires, and open flame) and disconnect electric power.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/63007CA	Domestic Dwelling Contents		
ISASAAA	Ants	0.5% finished spray (2 lb/gal SC/L) (50% SC/L) (0.5% RTU) --OR MAI-- 1:19 dilution (9.81%, 10% EC) or -- (0.2%, 0.3%, 0.5% RTU) (0.1%, 0.2%, 0.3%, 0.5% PrL)	Use limited to professional pest control operators. Application to household or domestic dwelling contents. For bed bug, treat mattress lightly on the underside around seams and buttons. For liquid-ready to use formulation, take bed apart and spray entire surface of bedstead, slats and springs. Spray thoroughly into cracks and joints in bedstead and on tufts and seams of mattress. Do not spray general surface of mattress. Air mattresses until completely dry (at least 4 hours) before reuse. For clothes moths, clean closet or other area and spray thoroughly, particularly into cracks in the floor, along baseboard and around mouldings. Clean and brush articles to be protected. Spray woolen articles thoroughly on upper and lower surfaces, especially along the seams and into folds or pleats, with nozzle of sprayer held at least 18 inches from the fabric. The spray must be applied carefully and evenly as a light mist to avoid staining.
IQAFACA	Bed bug		
INATAFA	Carpet beetle		
ITBSABA	Clothes moths		
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IOAAAAA	Flies		
IKAAAAA	Spiders		
ILAAACA	Ticks		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwelling Contents (continued)		
			Allow sprayed articles to dry thoroughly before storing or using. Repeat applications at 30 day intervals, unless articles are stored immediately after treatment in moth-tight containers, previously cleaned and sprayed as directed above. OR MAI Formulated with one or a combination of: allethrin; d-trans allethrin; propoxur; MGK 264; piperonyl butoxide; pyrethrins; and methoprene.
INATAHC ITBSABA IMPBACA	(Black carpet beetle (larvae)) (Clothes moths) (Silverfish)	resin strips 1 strip/100 cu. ft (15% Impr)	Military use only. Insecticidal strip. Suspend in storage chests and clothes closets. Do not place unprotected strip in direct contact with fabrics. Effective for 2 months. Replace when effectiveness diminishes.
		resin strips 1 strip/100 cu. ft (20% Impr)	Insecticidal strip. Hang in closets, cabinets and small spaces. Effective for 2 to 3 months. Replace when effectiveness diminishes.
/630060A	Domestic Dwelling Food Handling Areas		
ILABAFA INABADA IVAAABA INBUATA IVAHAAA INABAEA IMNAAAA IOAAAAA INASEKA	Cheese mites Cigarette beetles Cockroaches Conflused flour beetle Crickets Drugstore beetle Fleas Flies (including cheese skipper, gnats and mosquitoes) Grain weevils	10 g/10,000 cu. ft (2.95% PrL) or 18-33.6/g 10,000 cu. ft (5.37%, 7% PrL) --OR MAI-- -- (0.5% RTU) (0.5% PrL)	Use limited to professional pest control operators. Indoor fogging application. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly. OR MAI

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwelling Food Handling Areas (continued)		
	Pest list continued from previous page.		
INBUABA	Mealworms		Formulated with ronnel.
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
IVAAABA	Cockroaches	-- (0.25% P/T)	Bait application. Unwrap and dip complete pellet in water. Avoid excess wetting. Place in dish included in package to retain moisture. Locate in kitchen.
/630010A	Domestic Dwellings (Indoor)		
ISASAAA	Ants	0.5% finished spray (0.5, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (10%, 20% EC) (1.15, 2, 8.39, 10 lb/gal SC/L) (23.7%, 50% SC/L) (0.07 lb/gal RTU) (0.5% RTU) or	Use limited to professional pest control operators. Indoor application. Apply as a coarse, wet spray where pests hide or congregate around baseboards, cracks, walls, floors, door and window frames, localized areas of floor behind shelving of storage areas and other places where pests may congregate walk or hide. For ants, spray on trails and points of entry such as around door frames, window sills, openings around pipes and door jambs. For bedbugs, spray into corners, cracks and crevices and behind and under objects in room. For ants, centipedes, cockroaches, crickets, millipedes, silverfish, spiders and ticks, spray cracks and crevices in woodwork, walls, floors, around doors, window frames, baseboards,
IQAFACA	Bedbug		
INATAFA	Carpet beetle		
ISBAAAA	Centipedes		
ILAVABA	Clover mite		
IVAAABA	Cockroaches		
IVAHAAA	Crickets		
IMPBABA	Firebrat		
IMNAAAA	Fleas		
IOAAAAA	Flies (including gnats and mosquitoes)		
IJCAAAA	Millipedes		
ITAAABA	Moths		
IJEBAAA	Scorpions		
IMPBACA	Silverfish		
IKAAAAA	Spiders (including black widow)		
ILAAACA	Ticks (including brown dog tick)		

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwellings (Indoor) (continued)		
	Pest list continued from previous page.		
ISAAADA	Wasps (including hornets, paper wasp and mud dauber)	--OR MAI-- 0.125-0.5% finished spray (0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (2.89%, 5.19%, 8%, 9%, 9.81%, 10%, 12.31% EC) (0.5%, 1%, 50% SC/L) or 1:3 dilution (1% EC) (1% SC/L)	behind shelving of storage areas and around pipes. Also spray until slightly wet, surfaces behind and beneath cabinets, refrigerators, sinks and stoves. For fleas and ticks, thoroughly spray infested areas around baseboards, window and door frames, cracks and crevices in walls and floor and localized areas of floor and floor coverings around pet sleeping quarters. For silverfish, spray storage areas and bookshelves. Repeat as needed. The 2.89% emulsifiable concentrate formulation may be tank mixed with diazinon. OR MAI Formulated with one or a combination of: methylene chloride; propoxur; MGK 264; diazinon; ronnel; chlorpyrifos; piperonyl butoxide; pyrethrins; and tetrachloroethylene.
		-- (0.5% RTU) (0.5%, 0.75% PrL) --OR MAI-- 0.06-0.16 oz/gal or 1:11-1:5 dilution (0.2, 0.23, 0.25, 0.5 lb/gal EC) or 6-16 fl.oz 0.5%, 0.6% EC/gal (0.5%, 0.6% EC) or	Indoor application. Spray directly on pests where possible. Thoroughly spray into all places where pests hide or seek shelter such as all cracks and crevices. Refer to above use paragraph for specific use instructions regarding pests. OR MAI Formulated with one or a combination of: allethrin; d-trans allethrin; 2-butoxyethanol; essential oils; methylene chloride; propoxur; MGK 264; N-octyl sulfoxide of isosafrole; malathion; diazinon; ronnel; chlorpyrifos; piperonyl butoxide; pyrethrins; and methoprene.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Domestic Dwellings (Indoor) (continued)		
	-- (0.2%, 0.25%, 0.3%, 0.5%, 0.55% RTU) (0.1%, 0.2%, 0.25%, 0.255%, 0.3%, 0.5%, 0.51%, 0.538% PrL)	
	10-15 seconds/1,000 cu.ft (0.07 lb/gal RTU) or 10-15 seconds/1,000 cu.ft (0.5% RTU) or 1% finished spray [1.25 pt/10,000 cu.ft] (1% RTU) or 15-20 seconds/1,000 cu.ft (0.5% PrL) or 8-10 seconds/120 sq.ft (0.75% PrL)	Use of formulations above 0.5 percent limited to professional pest control operators. Space treatment. Spray upwards into 4 corners of room. Close all doors and windows for approximately 15 minutes after treatment. Do not reenter premises until thoroughly ventilated. OR MAI Formulated with one or a combination of: allethrin; d-trans allethrin; 2-butoxyethanol; essential oils; methylene chloride; propoxur; MGK 264; N-octyl sulfoxide of isosafrole; malathion; diazinon; ronnel; chlorpyrifos; piperonyl butoxide; pyrethrins; and methoprene.
	--OR MAI--	
	10-15 seconds/1,000 cu.ft (0.2%, 0.25%, 0.3%, 0.5%, 0.55% RTU) or	

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Domestic Dwellings (Indoor) (continued)		
	4-6 seconds/ 1,000 cu.ft (0.1%, 0.2%, 0.25%, 0.255%, 0.3%, 0.5%, 0.51%, 0.538% PrL) or 6 fl.oz 3.23%, 7% PrL/5,000 cu.ft (3.23%, 7% PrL)	
	0.5% finished spray [0.25 gal/ 1,000 sq.ft] (0.5% RTU) or 1% finished spray [1 gal/ 50,000 cu.ft] (1% RTU)	Use limited to professional pest control operators. Indoor application. Apply in machine capable of low volume delivery or similar equipment adjusted to coarse spray. Spray into cracks and crevices and other areas where pests hide. Formulated with one or a combination of: allethrin; MGK 264; piperonyl butoxide; and pyrethrins.
	4-7 seconds/ 1,000 cu.ft (0.5% PrL)	Space treatment. Spray into corners, behind curtains and drapes, under beds and tables, in closets and other dark areas where pests hide. Keep room closed for 15 minutes.
	0.05-0.06 oz/ 10,000 cu.ft (0.5% PrL)	Space treatment. Locate fogger in center of room or area being treated. Place newspapers under fogger and for 3 or 4 feet around the can to prevent staining or marring surfaces. Open cabinets and doors to areas to be treated. Keep at arms length when releasing. Point top of can away from face and eyes. To start fogging action, press plastic tab on valve down until it clicks. Set in upright position and leave

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwellings (Indoor) (continued)		
			the building at once. Leave undisturbed for at least 2 hours. Open doors and windows and allow to air for 30 minutes. Solvents may soften some asphalt or synthetic tile floors. If used directly over asphalt or synthetic tile, newspapers should be spread on the floor for several feet around the area of release. Do not use with freshly waxed floors; allow wax to become hardened. Some plastics may be affected. Remove or cover plastic items such as eyeglasses, stereo covers and notion boxes.
ILABAFA	Cheese mites	10 g/10,000 cu. ft (2.95% PrL) or 18-33.6 g/ 10,000 cu. ft (5.37%, 7% PrL) --OR MAI-- -- (0.5% RTU) (0.5% PrL)	Use limited to professional pest control operators. Indoor fogging application. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. Do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly. OR MAI Formulated with ronnel.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IOAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASEKA	Grain weevils		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Domestic Dwellings (Indoor) (continued)		
IVAAABA	Cockroaches	-- (0.25% P/T)	Bait application. Unwrap and dip complete pellet in water. Avoid excess wetting. Place in dish included in package to retain moisture. Locate in bathrooms near plumbing, closets, hollow walls, basement foundations, attic hatches and storage shelves.
		resin strips 1 strip/ meter box (15%, 20% Impr)	Insecticidal strip. For control of cockroaches in tight electric and water meter boxes, place 1 ministrip on the bottom of each box. Effective for 1 to 2 months. Replace when effectiveness diminishes. The 15 percent formulation is specified for military use only.
IOAAAAA	Flies (including blow fly, house flies and stable fly)	0.9-1.2 oz/ 5,000 sq. ft or 4.8-7.2 oz/ 5,000 sq. ft (0.6% G)	Bait application in and around entrances to homes. For adults, scatter where flies congregate over large enough area that all flies have an opportunity to feed upon or touch the formulation in a short period of time. Also treat as many places as possible where formulation may remain dry and uncovered. Apply 5 times weekly until fly population is reduced, then repeat as needed. For maggots, scatter evenly and thoroughly over the entire infested area. Use 6 inches or more around all sides. For both adults and maggots, apply higher rate to ground floors, ledges, window sills, shelves, litter, garbage and similar areas where flies congregate and breed. Apply evenly and thoroughly to breeding areas. Repeat as needed. May be formulated with malathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/6300050A	Domestic Dwelling (Indoor) Excluding Food Handling Areas		Do not use in nurseries or rooms where infants, ill or aged persons may be confined. Do not use in kitchens or areas food is prepared or served. Weather or other conditions such as extreme ventilation or strong drafts may affect the performance of strips. Effective for 1 to 4 months. Replace when effectiveness diminishes.
IMOAAAA IMPBACA	Flies (including gnats and mosquitoes) (Silverfish)	resin strips 1 strip/150 cu.ft (15% Impr)	Military use only. Insecticidal strip. Hang in houses or other enclosed areas. Also for use in tents, house trailers and cabins. In large tents, trailers and cabins, more than 1 strip will normally be required.
		resin strips 1 strip/1,000 cu.ft (15%, 20% Impr)	Insecticidal strip. Hang in homes, cabins, motels and garages.
		resin strips 1 strip/200 cu.ft (20% Impr)	Insecticidal strip. Hang in houses or other enclosed areas. Also for use in tents, housetrailers and cabins. In large tents, trailers and cabins, more than 1 strip will normally be required.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	(Noncrop, Wide Area, and General Indoor/Outdoor Treatments)		
/880030A	Latrines (Outdoor)		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
ISASAAA ILAMAQA IVAAABA IMNAAAA IOAAAAA IIFAAEA	Ants Brown dog tick Cockroaches Fleas Flies (including gnats and mosquitoes) Sowbugs	0.5% finished spray [0.05 lb/5,000 sq.ft] (1.16, 1.59, 2, 4, 4.8 lb/gal EC) (20% EC)** (1.15, 8.39, 10 lb/gal SC/L) or 1% finished spray [0.625-1.25 gal/A] (1% RTU) --OR MAI-- 0.5% finished spray [1.25 gal/5,000 sq.ft] (0.5% RTU)	Use limited to professional pest control operators. Outdoor application. Apply as a coarse, wet spray. Repeat as needed. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.
IOAAAAA	Flies (including house fly)	0.2-0.4 oz/5,000 sq.ft [dry bait] or 0.08-0.16 oz/gal [liquid bait] (0.5%, 1% G) or	Bait application. Apply on ground or areas where flies congregate. Repeat as needed. OR MAI Formulated with trichlorfon or ronnel.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Latrines (Outdoor) (continued)		
		--OR MAI-- 0.04-0.4 oz/5,000 sq.ft [dry bait] (0.25%, 0.1%, 0.5%, 1% G) or 0.016-0.16 oz/gal [liquid bait] (0.25%, 0.1%, 0.5%, 1% G)	
		1 oz/5,000 sq.ft or 4-6 oz/5,000 sq.ft (1% G)	Bait application. Apply lower rate for adults and higher rate for maggots. Repeat at 7 day intervals or more often as required to reduce fly population.
IDAAAAA	Flies (including gnats and mosquitoes)	resin strips 1 strip/latrine (20% Impr)	Insecticidal strip. Effective for 3 months. Replace when effectiveness diminishes.
IDAAAAA	Flies (including gnats and mosquitoes)	1% finished spray [0.05-0.2 lb/A] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8, 8.39, 8.4, 10 lb/gal SC/L) (15%, 20%, 23.7%, 50%, 90% SC/L)** or 0.04 lb/A (0.07 lb/gal RTU) (1% RTU)**	Use limited to professional pest control operators. Outdoor fogging application. Do not treat areas where food or feed crops are growing.
ISAAADA	Wasps		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Latrines (Outdoor) (continued)		
		0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU)	Outdoor fogging application. Do not treat areas where food or feed crops are growing.
/560301A	Rats, Plague Vectors		
IMNAAAA	Fleas	resin strips 1-2 inch 20% Impr strip/ratronix enclosure (20% Impr)	Animal treatment. Suspend 1, 2 inch resin strip in the ratronix enclosure (rat receptacle bag). To assure that all fleas are dead, do not remove the receptacle for at least 1 hour after the last rat has been killed. Replace every 30 days or as needed.
/670020A	Recreational Areas (including Campgrounds, Drive-In Theaters, Golf Courses, Picnic Areas, Parks, Fairs, Camps and Zoos)		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
ISASAAA IVAAABA IMNAAAA IDAAAAA IMPBACA IIFAAEA IKAAAAA ILAAACA	Ants Cockroaches Fleas Flies (including gnats and mosquitoes) Silverfish Sowbugs Spiders Ticks (including brown dog tick)	0.5% finished spray [0.05 lb/5,000 sq.ft] (1, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 8.39, 10 lb/gal SC/L) or 1% finished spray [0.04-0.12 lb/5,000 sq.ft] (2 lb/gal EC) or [0.625-1.25 gal/A] (1% RTU) or	Use limited to professional pest control operators. Outdoor application. Apply as a coarse, wet spray. Repeat as needed. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Recreational Areas (continued)		
		--OR MAI--	
		0.5% finished spray [1.25 gal/ 5,000 sq.ft] (0.5% RTU)	
IDAAAAA	Flies (including blow flies, house fly and stable fly)	0.5 oz/5,000 sq.ft (0.5% D)	Bait application. Apply in strips where flies gather. If flies are extremely numerous, a higher dosage may be needed.
		0.1-1 oz/ 5,000 sq.ft [dry bait] or 0.08-0.2 oz/ gal [liquid bait] (0.5%, 0.6%, 1% G)	Bait application. Apply on ground or areas where flies congregate. OR MAI Formulated with one or a combination of: trichlorfon or ronnel.
		--OR MAI--	
		0.04-0.4 oz/ 5,000 sq.ft [dry bait] or 0.016-0.16 oz/gal [liquid bait] (0.25%, 0.1%, 0.5%, 1% G)	
		0.9-1.2 oz/ 5,000 sq.ft or 4-7.8 oz/ 5,000 sq.ft (0.6%, 1% G)	Bait application. Apply lower rate for adult control and higher rate for maggot control. Repeat as needed.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Recreational Areas (continued)		
		0.12 oz/gal (2, 4 lb/gal EC)	Use limited to professional pest control operators. Bait application to drive-in theaters. Spot spray areas where flies congregate. Repeat as needed. Mix with powdered sugar.
		1 strip/150 cu.ft (15% Impr) or 1 strip/200 cu.ft (20% Impr)	Insecticidal strip. Place in enclosed areas of camping areas (such as house trailers and cabins). The 15 percent formulation is specified for military use only.
		1 gal 1.5% or 2.5% EC/ 24 gal (1.5%, 2.5% EC)	Outdoor application. Spray exposed areas such as walls, fences and refuse containers. Repeat as needed. Formulated with dimethoate.
IOAAAAA ISAAADA	Flies (including gnats and mosquitoes) Wasps	1% finished spray [0.05-0.2 lb/A] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8, 8.39, 8.4 10 lb/gal SC/L) (15%, 20%, 23.7%, 50%, 90% SC/L)** or 0.04 lb/A (0.07 lb/gal RTU) (1% RTU)** --OR MAI-- 0.5% finished spray [0.05-0.1 lb/A] (5.05% SC/L)	Use limited to professional pest control operators. Outdoor fogging application. Do not treat areas where food or feed crops are growing. OR MAI Formulated with methoxychlor.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Recreational Areas (continued)		
		0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU) or -- (0.5% PrL) --OR MAI-- 0.05-0.125% finished spray (0.5% SC/L)	Outdoor fogging application. Do not treat areas where food or feed crops are growing. OR MAI Formulated with malathion.
ILAWAAA ILAAACA	Chigger mites Ticks	0.5% finished spray [1 lb/A] (50% WP) --OR MAI-- 0.0625-0.2 lb/A [40-100 gal water/A] (0.2, 0.25, 0.5, 0.63 lb/gal EC) or 1 pt 5.19% or 9% EC/A [40-100 gal water/A] (5.19%, 9% EC)	Outdoor treatment. Spray infested areas thoroughly. Spray along foot paths and roadsides leading to such areas in campgrounds, picnic areas and recreational parks. OR MAI Formulated with chlorpyrifos.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/890010A	Refuse and Solid Waste Containers		
ISASAAA IVAAABA IDAAAAA ISAAADA	Ants Cockroaches Flies (including gnats and mosquitoes) Wasps	-- (0.5% G)	Refuse and solid waste container treatment. Sprinkle liberally in containers before and after filling. Repeat as needed. Formulated with formaldehyde, malathion, alkyl*dimethyl benzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14), and alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18).
		0.02 oz/10 sq.ft container (1% G)	Bait application. Apply in garbage cans and dumpsters of hotels, restaurants, hospitals, schools and municipal buildings. Not intended for household use. Use only in areas inaccessible to children and pets. For flies, sprinkle liberally in refuse and garbage containers before and after filling. Repeat as needed.
		resin strips 1 strip/24 gal capacity container (15% Impr)	Insecticidal strip for military use only. Attach 1 ministrip inside each can. Keep lid on can. One unit will be effective for the entire fly season.
		resin strips 1 strip/ container (20% Impr)	Insecticidal strip. Attach to underside of the lid of an average sized garbage can. Keep the lid on the garbage can.
		resin strips 1 strip/100 cu.ft container (20% Impr)	Insecticidal strip. Industrial use for garbage cans and other waste receptacles.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Refuse and Solid Waste Containers (continued)		
IOAAAAA	Flies (including blow flies, house fly and stable fly)	-- (0.5%, 0.6%, 1%, 5% G)	Bait application. Apply around and inside garbage can. Repeat as needed.
		--OR MAI--	OR MAI Formulated with malathion or ronnel.
		-- (0.1%, 0.5%, 0.6% G)	
		resin strips 1 strip/20 gal container (15%, 20% Impr)	Insecticidal strip. Attach 1 strip inside of an average sized garbage can (20 gallons). One strip will maintain effectiveness for the entire fly season. Keep lid on can.
		1 gal 1.5% or 2.5% EC/24 gal container (1.5%, 2.5% EC)	Refuse and solid waste container treatment. Formulated with dimethoate.
ISBIAEA	Yellowjackets	0.5% finished spray (2 lb/gal EC)	Refuse and solid waste container treatment. Spray inside of lid and inside of the containers each time that the container is emptied.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/890000A	Refuse and Solid Waste Sites		
			Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
ISASAAA	Ants	--	Application to garbage dumps and trucks. Sprinkle liberally. Repeat as needed. Formulated with formaldehyde, malathion, alkyl*dimethyl benzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14), and alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18).
ILAMAQA	Brown dog tick	(0.5% G)	
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IOAAAAA	Flies (including gnats and mosquitoes)		
IIFAAEA	Sowbugs		
ISAAADA	Wasps		
		0.5% finished spray [0.05 lb/5,000 sq.ft] (1, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 8.39, 10 lb/gal SC/L) or 1% finished spray [0.04-0.12 lb/5,000 sq.ft] (2 lb/gal EC) or [5-10 pt/A] (1% RTU) or	Use limited to professional pest control operators. Outdoor application. Apply as a coarse, wet spray. Repeat as needed. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Refuse and Solid Waste Sites (continued)		
		--OR MAI-- 0.5% finished spray [1.25 gal/ 5,000 sq.ft] (0.5% RTU)	
IOAAAAA	Flies (including blow flies, house fly and stable fly)	0.1-1 oz/ 5,000 sq.ft [dry bait] or 0.08-0.13 oz/gal [liquid bait] (0.5%, 1% G)	Bait application. Apply on ground or areas where flies congregate. OR MAI Formulated with trichlorfon or ronnel.
		--OR MAI-- 0.1-0.4 oz/ 5,000 sq.ft [dry bait] or 0.08-0.13 oz/gal [liquid bait] (0.25%, 0.1%, 0.5% G)	
		0.9-1.25 oz/ 5,000 sq.ft or 4.8-7.2 oz/ 5,000 sq.ft (0.6% G)	Bait application in and around incinerators. Apply lower rate for adult control and higher rate for maggot control. Repeat as needed. May be formulated with malathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Refuse and Solid Waste Sites (continued)		
IOAAAAA ISAAADA	Flies (including gnats and mosquitoes) Wasps	1% finished spray [0.05-0.2 lb/A] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8, 8.39, 8.4, 10 lb/gal SC/L) (15%, 20%, 23.7%, 50%, 90% SC/L)** or 0.04 lb/A (0.07 lb/gal RTU) (1% RTU)** --OR MAI-- 0.2% finished spray (1.4%, 2.5%, 4.7% EC) or 0.5% finished spray [0.05-0.1 lb/A] (5.05% SC/L)	Use limited to professional pest control operators. Outdoor fogging application. Do not treat areas where food or feed crops are growing. OR MAI Formulated with one or a combination of: methoxychlor; fenthion; or malathion.
		0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU) --OR MAI-- 0.05-0.125% finished spray (0.5% SC/L)	Outdoor fogging application. Do not treat areas where food or feed crops are growing. OR MAI Formulated with malathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/680000A	Wide Area General Indoor/ Outdoor Treatments		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/ adulticide on this site (due to toxicity to birds and aquatic organisms. Dichlorvos is toxic to fish, birds and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, marshes, bogs and potholes). Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes.
IVAAABA	Cockroaches	1 gal 1% EC/ 4 gal (1% EC) or 1 gal 1.26% EC/5 gal (1.26% EC) or 1 gal 4.7% EC/10 gal (4.7% EC) or 1 gal 2.5% SC/L/12 gal (2.5% SC/L)	Use limited to professional pest control operators. Application for municipal reduction of cockroach populations. Thoroughly wet the insides of manholes and sewage lines. Treat garbage racks, and garbage cans found in alleys between buildings. Apply as a coarse spray and wet garbage dumps and refuse areas. Repeat as needed. Formulated with one or a combination of: lindane; methoxychlor or malathion.
IDAAAAA	(Flies (including mosquitoes))	1 gal 1% EC/ 15 gal (1% EC) or 1 gal 1.4% EC/7 gal (1.4% EC) or 1 gal 2.5% EC/12 gal (2.5% EC) or 1 gal 4.7% EC/25 gal (4.7% EC)	Use limited to professional pest control operators. Outdoor application. Apply so that the residual deposit will aid in the control of flies and mosquitoes. Thoroughly wet the surfaces where pests alight such as garbage dumps, refuse heaps, outside of barns and buildings and undergrowth near stagnant water. Formulated with one or a combination of: lindane; methoxychlor or malathion.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Wide Area General Indoor/Outdoor Treatments (continued)		
IOAMAAJ	Mosquitoes (adults)	0.2-0.23 lb/5 A or 0.2-0.23 lb/10 A (0.2, 0.23 lb/gal EC)	Use limited to professional pest control operators. Outdoor application. Apply in sufficient water or oil to cover vegetation. Use higher rate for heavy vegetation and lower rate for nonexistent to medium vegetation. Formulated with chlorpyrifos.
		1-1.5 pt 1% EC/A (1% EC) or 4 pt 1% EC/A (1% EC) or 1 pt 1.26% EC/12 gal or 1 gal 4.7% EC/25 gal [50 gal/A] (1.26%, 4.7% EC) or 1 gal 2.5% EC or SC/L/12 gal [6.5 gal/A] (2.5% EC) (2.5% SC/L) or 1 gal 0.5% SC/L/4-10 gal (0.5% SC/L) or 1 gal 1%, 1.62% SC/L/3-9 gal [3 gal/A] (1%, 1.62% SC/L) or	Use limited to professional pest control operators. Outdoor fogging application. Formulated with one or a combination of: lindane; 2-butoxyethanol; stabilene; methoxychlor; methylene chloride; propoxur; fenthion; malathion or ronnel.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Wide Area General Indoor/Outdoor Treatments (continued)		
	1 gal 1.4% SC/L/7 gal [3.2 gal/A] (1.4% SC/L)	
	or	
	1 gal 1.4% SC/L/5-6 gal	
	or	
	1 gal 2.5% SC/L/50 gal [2 gal/A] (1.4%, 2.5% SC/L)	
	or	
	1 gal 2.5% SC/L/5-12 gal (2.5% SC/L)	
	or	
	1 gal 3.5% SC/L/8-15 gal (3.5% SC/L)	
	or	
	1 gal 5.05% SC/L/10 gal [1.25-2.5 gal/A] (5.05% SC/L)	
	or	
	1 gal 6% SC/L/12 gal [0.5 gal/A] (6% SC/L)	
	or	
	0.75-2.5 gal 0.5% RTU/A (0.5% RTU)	
	or	
	0.5-1.25 gal 1% RTU/A (1% RTU)	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	(Commercial and Industrial Uses)		
/700010A	Aircraft		
IOAAAAA	Flies (including mosquitoes)	0.15-0.25 mg/liter of air/30 min. (100% RTU)	Insecticidal cartridge. Insert cartridge into mechanical system of aircraft prior to takeoff. The mechanical dispensing system may be operated while the aircraft is parked with the doors closed, while taxiing or while in flight.
/700020A	Buses		
ISASAAA	Ants	0.3 g/2,000 cu.ft (0.5% PrL) or 9-9.8 g/2,000 cu.ft (5%, 5.37% PrL)	Fogging application. The 5 and 5.37 percent formulations are specifically formulated for use in controlling pests infesting buses. The total contents of 2 containers are required for treatment of a bus having a volume of approximately 2,000 cubic feet. Buses should be out of service and posted during treatment relative to the health hazards involved. Application Directions: The temperature at the time of application should be between 70 F and 85 F (21.1 C and 29.4 C). Before releasing the aerosol, seal the outside vents of the bus with tape and open doors to the lavatory and the small compartments in the drivers section. Place one container at the rear of the passenger section and the other container near the driver section. Open aerosol valves when placing containers. After activating the aerosols, leave the bus and close the exit door. Best results are obtained by operating the air conditioning circulator for 10 minutes after the aerosols have been released. The bus should be left sealed for a minimum of 45 to 60 minutes in order that the insecticide vapor can disperse throughout the bus.
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IOAAAAA	Flies (including fruit flies, gnats, house fly and mosquitoes)		
ITAAABA	Moths		
IJEBAAA	Scorpions		
IMPBACA	Silverfish		
IKAAAAA	Spiders		
ILAAACA	Ticks		
ISAAADA	Wasps		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Buses (continued)		
			After treatment, open doors and windows and allow bus to ventilate for at least 4 hours before putting into service.
/77000JL	Commercial, Institutional and Industrial Areas (Indoor)		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
ISASAAA	Ants	0.5% finished spray (0.5, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (1.15, 2, 8.39, 10 lb/gal SC/L) (23.7%, 50% SC/L) (0.07 lb/gal RTU) or 1% finished spray [5 pt/5,000 sq. ft] (5% SC/L) or 1% finished spray (1% RTU) or	Use limited to professional pest control operators. Indoor treatment. Apply as a coarse, wet spray where pests hide or congregate around baseboards, cracks, walls, floors, door and window frames and localized areas of floors. OR MAI May be formulated with one or a combination of: d-trans allethrin; methylene chloride; propoxur; fenthion; MGK 264; malathion; diazinon; ronnel, chlorpyrifos; piperonyl butoxide; or pyrethrins.
IJBAAAA	Centipedes		
IVAAABA	Cockroaches		
IVAHAAA	Crickets		
INATAAA	Dermestid beetles		
IMNAAAA	Fleas		
IOAAAAA	Flies (including Drosophila, gnats, house fly and mosquitoes)		
IJCAAAA	Millipedes		
ITAAABA	Moths		
IJEBAAA	Scorpions		
IMPBACA	Silverfish		
IIFAAEA	Sowbug		
IKAAAAA	Spiders		
IMAAAFA	Stored product insects (exposed stages)		
ILAAACA	Ticks (including brown dog tick)		
ISAAADA	Wasps (including hornets)		

Commercial, Institutional and Industrial Areas (Indoor) (continued)

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	--OR MAI-- 0.07-0.5% finished spray (0.2, 0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (2.89%, 5.19%, 8%, 9%, 10%, 12.31% EC) (0.5%, 5.05%, 50% SC/L) or -- (0.25%, 0.4%, 0.5%, 0.55%, 0.75%, 1% RTU)	
	4 fl.oz 2.89% EC/24 fl.oz water (2.89% EC)	Use limited to professional pest control operators. Indoor treatment. Apply as directed above. Tank mix with diazinon to make 1 quart of finished spray.
	-- (0.5% RTU) (0.5% PrL)	Indoor treatment. Spray directly into cracks of woodwork, walls, floors, around doors and window frames, baseboards and behind shelving of storage areas. Also spray localized areas such as beneath and behind stoves, refrigerators, cabinets, closets, storage areas and equipment. For ants, spray ant trails around doors and window sills.

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Commercial, Institutional and Industrial Areas (Indoor) (continued)		
	1% finished spray [1 gal/ 64,000 cu. ft] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8.39, 10 lb/ gal SC/L) (0.07 lb/gal RTU) (1% RTU)	Use limited to professional pest control operators. Space treatment in industrial plants, theaters and warehouses. Apply with fogging or misting equipment. For ants, cockroaches and silverfish, the fog should be directed into cracks, crevices and hiding places. OR MAI Formulated with one or a combination of: stabilene; MGK 264; malathion; ronnel; piperonyl butoxide; pyrethrins; or tetrachloroethylene.
	or 0.5% finished spray [10-15 sec/ 1,000 cu. ft] (14% EC)	
	or 1-3% finished spray [1 gal/ 64,000 cu. ft] (1%, 5%, 23.7%, 50% SC/L)	
	--OR MAI--	
	0.5% finished spray [1 gal/ 64,000 cu. ft] (0.5% RTU)	
	or 1% finished spray [1 gal/ 64,000 cu. ft] (1% SC/L) (1% RTU)	

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Commercial, Institutional and Industrial Areas (Indoor) (continued)		
	0.5% finished spray [2 gal/ 64,000 cu.ft] (0.5% RTU)	Space treatment in industrial plants and warehouses. Apply with fogging or misting equipment.
	10-15 sec/ 1,000 cu.ft (0.5% PrL)	Space treatment. Spray upwards into 4 corners of room. Close windows for approximately 15 minutes after treatment.
	0.05-0.06 oz/ 10,000 cu.ft (0.5% PrL) or 0.3-0.45 oz/ 10,000 cu.ft (2.95% PrL)	Space treatment. Locate fogger in center of room or area being treated. Place newspapers under fogger unit and for 3 or 4 feet around the can to prevent staining or marring surfaces. Open cabinets and doors to areas to be treated. Keep at arms length when releasing. Point top of can away from face and eyes. To start fogging action, press plastic tab on valve down until it clicks. Set in upright position and leave the building at once. Leave undisturbed for at least 2 hours. Open doors and windows and allow to air for 30 minutes. Solvents may soften some asphalt or synthetic tile floors. If used directly over asphalt or synthetic tile, newpapers should be spread on the floor for several feet around the area of release. Do not use with freshly waxed floors; allow wax to become hardened. Some plastics may be affected. Remove or cover plastic items such as eyeglasses, stereo covers, notion boxes.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Commercial, Institutional and Industrial Areas (Indoor) (continued)		
ILABAFA	Cheese mite	10 g/10,000 cu.ft (2.95% PrL) or 18-33.6/g 10,000 cu.ft (5.37%, 7% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
IVAAABA	Cockroaches	-- (0.5% G)	Bait application. Place small quantities of the dry bait on pieces of paper, cardboard or in shallow jar lids and distribute at frequent intervals in secluded or protected areas where pests run or hide, such as in cabinets or closets, under sinks, refrigerators and counters. Each placement of bait stations must be inaccessible to children and pets. Wet the bait for enhanced killing action. Renew or replace as needed.

Commercial, Institutional and Industrial Areas (Indoor) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
		2x2 in. strip/box or receptacle or 1 precut strip/box or receptacle (15%, 20% Impr)	Insecticidal strip. Place strip in the bottom of tight electrical boxes, conduit and water meter boxes. Effective for 1 to 4 months. Replace when effectiveness diminishes.
IOAAAAA	Flies (including blow flies, house fly and stable fly)	0.1 oz/5,000 sq. ft [dry bait] or 0.16 oz/gal [liquid bait] (0.5% G)	Bait application. Scatter dry bait or sprinkle liquid bait evenly on floors or other horizontal surfaces where pests alight or congregate in factories. Application of liquid bait should be made daily until fly population is reduced and then 2 to 3 applications per week as needed.
		--OR MAI	OR MAI
		0.4 oz/5,000 sq. ft [dry bait] or 0.16 oz/gal [liquid bait] (1% G)	Formulated with ronnel.
		0.9-1.2 oz/ 5,000 sq. ft or 4.8-7.2 oz/ 5,000 sq. ft (0.6% G)	Bait application in and around open-air theaters and entrances to commercial buildings and stores. For adults, scatter where flies congregate over large enough area that all flies have an opportunity to feed upon or touch the formulation in a short period of time. Also treat as many places as possible where formulation may remain dry and uncovered. Apply 5 times weekly until fly population is reduced, then repeat as needed. For maggots, scatter evenly and thoroughly over the entire infested area. Use 6 inches or more around all sides. For both

Commercial, Institutional and Industrial Areas (Indoor) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
			adults and maggots, apply higher rate to ground floors, ledges, window sills, shelves, litter, garbage and similar areas where flies congregate and breed. Repeat as needed. May be formulated with malathion.
IOAAAAA	Flies (including gnats and mosquitoes)	resin strips 1 strip/ 1,000 sq.ft (20% Impr)	Insecticidal strip. Hang in warehouses or in public buildings such as museums. Effective for approximately 3 months. Replace when effectiveness diminishes.
		resin strips 1 strip/200 sq.ft (20% Impr)	Insecticidal strip. Hang in enclosed receptacles and other enclosed spaces. Excess ventilation will reduce effectiveness of the strip.
IOAAAAA ITAAABA	Flies (including gnats) Moths (including almond moth, clothes moth, Indian-meal moth and tobacco moth)	5 g/10,000 cu.ft (20% PrL)	Space treatment in non-food factories and seed warehouse areas. Several pressurized liquid containers can be mounted and wired in a series. This enables 2 or more units to be activated simultaneously through the use of a single electrical switch. A single unit activated for 45 seconds will treat approximately 50,000 cubic feet at the lower rate. For higher rate activate for 1.5 minutes to treat 50,000 cubic feet. For non-air conditioned factory areas, dosage based on lower rate. For air conditioned factory areas dosage based on higher rate. Treated areas should not be entered for a period of 4 hours after application or until aerosol particles have settled.
ISASAAA INATAFA IVAAABA IVAHAAA IMPBACA IMAAAFA	Ants Carpet beetle Cockroaches Crickets Silverfish Stored product insects (including cigarette beetles, flour beetles, lesser grain borer and saw-toothed grain beetle)	10 g/10,000 cu.ft (20% PrL)	

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/77000DA	Commercial, Institutional and Industrial Areas (Outdoor)		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
ISASAAA	Ants (including fire ant complex)	1 dispenser 20% Impr/4 cu.ft (20% Impr) 054543-00001	Enclosed outdoor utility equipment treatment. For use in outdoor utility equipment such as communications, electric, gas, water and cable television. Replace dispenser after 1 year or when effectiveness diminishes. For proper installation, position dispenser with cap end down on a vertical support. Securely attach dispenser with the cable tie and remove cap and foil seal. Indicate the date installed on the enclosed date label and attach on suitable surface inside the site. Product is ineffective when utility equipment door or cover is not closed.
ISAAACA	Bees		
IVAAABA	Cockroaches		
ISAAADA	Wasps		
ISASAAA	Ants	0.5% finished spray [0.05 lb/5,000 sq.ft] (0.5, 1, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 8.39, 10 lb/gal SC/L) or 1% finished spray [5-10 pt/5,000 sq.ft] (1% RTU) or	Use limited to professional pest control operators. Outdoor application to areas such as loading docks, parking areas, refuse areas around service stations, industrial plants and warehouses. Apply as a coarse, wet spray. Repeat as needed. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IDAAAAA	Flies (including gnats and mosquitoes)		
IMPBACA	Silverfish		
IIFAAEA	Sowbugs		
IKAAAAA	Spiders		
ILAAACA	Ticks (including brown dog tick)		

Commercial, Institutional and Industrial Areas (Outdoor) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
		--OR MAI--	
		0.5% finished spray [1.25 gal/ 5,000 sq.ft] (0.5% RTU)	
IDAAAAA	Flies (including house fly)	0.5 oz/5,000 sq.ft (0.5% D)	Bait application. Apply in strips where flies gather. If flies are extremely numerous, a higher dosage may be needed.
		0.1-0.4 oz/ 5,000 sq.ft [dry bait] or 0.08-0.16 oz/gal [liquid bait] (0.5%, 1% G)	Bait application. Scatter dry bait or apply liquid bait or ground or areas where flies congregate around loading docks, parking areas and around service stations. OR MAI Formulated with trichlorfon or ronnel.
		--OR MAI--	
		0.04-0.4 oz/ 5,000 sq.ft [dry bait] or 0.16 oz/gal [liquid bait] (0.1%, 0.25%, 0.5% G)	
		1 gal 1.5% or 2.5% EC/24 gal (1.5% 2.5% EC)	Outdoor application. Spray exposed areas such as walls, fences and refuse containers. Repeat as needed. Formulated with dimethoate.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Commercial, Institutional and Industrial Areas (Outdoor) (continued)		
IDAAAAA ISAAADA	Flies (including gnats and mosquitoes) Wasps	1% finished spray [0.05-0.2 lb/A] (1.16, 1.59, 2, 4, 4.8 lb/gal EC) (20% EC)** (1.15, 2, 8, 8.39, 8.4, 10 lb/gal SC/L) (15%, 20%, 23.7%, 50%, 90% SC/L)** or 0.04 lb/A (0.07 lb/gal RTU) (1% RTU)**	Use limited to professional pest control operators. Outdoor fogging application to areas such as loading docks, parking areas and refuse areas around service stations.
		0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU)	Outdoor fogging application to areas such as loading docks, parking areas and refuse areas around service stations.
/71023CA	Cottonseed Mills		
IMAAAFA	Stored product insects (exposed)	0.1-1% finished spray (4% EC)	Indoor treatment. Do not use on product or ingredient zone surfaces. Frequency of treatment is dependent upon how much lint, meal or hulls cover up the residual deposit, but approximately repeat at 1 to 3 week intervals. Formulated with diazinon.

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/72000DB	Eating Establishments (Indoor, Edible)		
ISASAAA IVAAABA IMPBACA IKAAAAA	Ants Cockroaches Silverfish Spiders	0.5% finished spray (2, 4 lb/gal EC) (20% EC) (2 lb/gal SC/L) (50% SC/L) or 1% finished spray (1% RTU) --OR MAI-- 0.1-0.56% finished spray (0.2, 0.25, 0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (1%, 5.19%, 8%, 9%, 9.81%, 12%, 12.31% EC) or -- (0.55%, 0.75% RTU) or 1-3 sec/linear ft (0.25% PrL)	Use limited to professional pest control operators. Crack and crevice treatment. Apply a small amount into cracks and crevices such as expansion joints between different elements of construction, or between equipment bases and the floor, wall voids or hollow equipment legs where pests hide. Care should be taken to avoid depositing the formulations into exposed surfaces or introducing into the air. Avoid contamination of food or food processing surfaces. Do not use on carpet. Do not apply water diluted finished sprays in conduits, motorhouses and electrical switch boxes. OR MAI Formulated with one or a combination of: d-trans allethrin; propoxur; malathion; ronnel; or chlorpyrifos.
		0.5% finished spray (20% EC) --OR MAI-- 0.125-0.56% finished spray (0.2, 0.67 lb/gal EC)	Use limited to professional pest control operators. Spot treatment. Apply in serving areas where prepared foods are served such as dining rooms, but excluding areas where food may be prepared or held. Apply to selective surfaces such as baseboards, under elements of construction into cracks and crevices. Avoid treating surfaces likely to be contacted by foods. Do not apply when facility is in operation or

Eating Establishments (Indoor, Edible) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
			foods are exposed. Apply higher rate for heavy infestations and lower rates for lighter infestations. OR MAI Formulated with chlorpyrifos.
ILABAFA	Cheese mite	10 g/10,000 cu. ft (2.95% PrL) or 19.6/g 10,000 cu. ft (7% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Open all doors and windows and ventilate thoroughly before reoccupying. Unwrapped or unpackaged foods should be removed during treatment. Food handling equipment and dishes should be washed thoroughly after application. All food processing surfaces should also be covered during treatment or thoroughly cleaned before processing is resumed. When using in these areas, apply only when facility is not in operation.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
IVAAABA	Cockroaches	-- (0.5% G)	Bait application. When used in food areas of food handling establishments, place baits in suitable bait stations. Place small quantities of the dry bait on pieces of paper, cardboard or in shallow jar lids and distribute at frequent intervals in secluded or protected areas where pests run or hide, such as in cabinets

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Eating Establishments (Indoor, Edible) (continued)		
			or closets, under sinks, refrigerators and counters. Each placement of bait stations must be inaccessible to children and pets. Wet the bait for enhanced killing action. Renew or replace as needed.
IOAAAAA	Flies (including blow flies, house fly and stable fly)	-- (0.5% G) --OR MAI-- 0.02 oz/5,000 sq.ft (0.043% G) or -- (0.25% G)	Bait application. Apply only when facility is not in operation and food is not exposed. Use only in bait boxes where bait in each box can be accounted for. Remove and account for all bait boxes prior to resuming food processing. OR MAI Formulated with one or a combination of: propoxur; ronnel; or (Z)-9-tricosene.
/72000JC	Eating Establishments (Indoor, Inedible)		Inedible areas include garbage rooms, lavatories, floor drains (sewers), entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets and storage (after canning and bottling).
ISASAAA	Ants	0.5% finished spray (0.5, 1.16, 1.4, 1.59, 2, 4, 4.48 lb/gal EC) (1.15, 2, 8.39, 10 lb/gal SC/L) (23.7%, 50% SC/L) or 1% finished spray [0.5-1 pt/5,000 sq.ft] (5% EC) (5% SC/L) or	Use limited to professional pest control operators. Indoor treatment. Apply as a coarse, wet spray where pests hide or congregate around baseboards, cracks, walls, floors, door and window frames and localized areas of floors. OR MAI May be formulated with one or a combination of: d-trans allethrin; methylene chloride; propoxur; fenthion; MGK 264; malathion; diazinon; ronnel; chlorpyrifos; piperonyl butoxide; or pyrethrins.
ILAMAQA	Brown dog tick		
IVAAABA	Cockroaches		
IMDAAAA	Earwigs		
IMNAAAA	Fleas		
IOAAAAA	Flies (including Drosophila, gnats and mosquitoes)		
ITAAABA	Moths		
IMMAAAA	Psoccids		
IMPBACA	Silverfish		
IKAAAAA	Spiders		
IMAAAFA	(Stored product insects)		
ISAAADA	Wasps (including hornets)		

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Eating Establishments (Indoor, Inedible) (continued)		
	1% finished spray (1% RTU) --OR MAI-- 0.07-0.5% finished spray (0.2, 0.23, 0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (2.89%, 5.19%, 8%, 9%, 10%, 12%, 12.31% EC) (0.5%, 5.05%, 50% SC/L) or -- (0.25%, 0.5%, 0.55%, 1% RTU)	
	4 fl.oz 2.89% EC/24 fl.oz water (2.89% EC)	Use limited to professional pest control operators. Indoor treatment. Apply as directed above. Tank mix with diazinon to make 1 quart of finished spray.
	-- (0.5% RTU) (0.5% PrL)	Indoor treatment. Pay particular attention to breeding and nesting sites such as cracks in walls, floors, along baseboards, around doors, window frames, behind shelving of storage areas, in closets and storage cabinets and other areas pests may congregate, walk or hide. For ants, spray ant trails around doors and window sills.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Eating Establishments (Indoor, Inedible) (continued)		
		1-3% finished spray [1 gal/ 64,000 cu. ft] (2 lb/gal EC) (5% EC) or 1% finished spray [1 gal/ 64,000 cu. ft] (1% RTU) --OR MAI-- 0.5% finished spray [0.4-1.6 gal/64,000 cu. ft] (0.5% RTU)	Use limited to professional pest control operators. Space treatment. Apply with fogging or misting equipment. OR MAI Formulated with one or a combination of: stabilene; MGK 264; malathion; ronnel; piperonyl butoxide; pyrethrins; or tetrachloroethylene.
		10-15 sec/ 1,000 cu. ft (0.5% PrL) --OR MAI-- 10-15 sec/ 1,000 cu. ft (0.5% RTU)	Space treatment. Spray upwards into 4 corners of room. Close windows for approximately 15 minutes after treatment. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.
IDAAAAA	Flies	0.9-1.2 oz/ 5,000 sq. ft or 4.8-7.2 oz/ 5,000 sq. ft (0.6% G)	Bait application in and around cafes and drive-in restaurants. For adults, scatter where flies congregate over a large enough area that all flies have an opportunity to feed upon or touch the formulation in a short period of time. Also treat as many places as possible where formulation may remain dry and uncovered. Apply 5 times weekly until fly population is reduced, then repeat as needed. For maggots, scatter evenly and thoroughly over the entire infested area. Use 6 inches

Eating Establishments (Indoor, Inedible) (continued)

or more around all sides. For both adults and maggots, apply higher rate to ground floors, ledges, window sills, shelves, litter, garbage and similar areas where flies congregate and breed. Apply evenly and thoroughly to breeding areas. Repeat as needed.
May be formulated with malathion.

/720000A Eating Establishments (Outdoor)

Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms).

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
ISASAAA	Ants	0.5% finished spray [0.05-0.1 lb/5,000 cu.ft] (0.5, 1, 1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 8.39, 10 lb/gal SC/L) or 1% finished spray [5 pt/5,000 sq.ft] (1% RTU) --OR MAI-- 0.5% finished spray [1.25 gal/5,000 sq.ft] (0.5% RTU)	Use limited to professional pest control operators. Outdoor application to areas such as drive-in restaurants and ice-cream stands. Apply on apron between serving counter and parking areas, paying particular attention to trash barrels and garbage cans where flies congregate. Apply as a coarse, wet spray. Repeat as needed. OR MAI Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.
IVAAABA	Cockroaches		
IMNAAAA	Fleas		
IOAAAAA	Flies (including gnats and mosquitoes)		
IMPBACA	Silverfish		
IIFAAEA	Sowbugs		
IKAAAAA	Spiders		
ILAAACA	Ticks (including brown dog tick)		

Eating Establishments (Outdoor) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
IDAAAAA	Flies (including house fly)	0.1-0.4 oz/5,000 sq.ft [dry bait] or 0.08-0.2 oz/gal [liquid bait] (0.5%, 0.6%, 1% G) --OR MAI-- 0.02-0.4 oz/5,000 sq.ft [dry bait] or 0.016-0.16 oz/gal [liquid bait] (0.043%, 0.1%, 0.25%, 0.5% G)	Bait application. Sprinkle lightly on walks, alley-ways and other horizontal surfaces where flies frequent. Also apply on apron between serving counter and parking area, paying particular attention to trash barrels and garbage cans where flies congregate. Repeat as needed. OR MAI Formulated with one or a combination of: propoxur; trichlorfon; ronnel; or (Z)-9-tricosene.
IDAAAAA ISAAADA	Flies (including gnats and mosquitoes) Wasps	1% finished spray [0.05-0.2 lb/A] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (20% EC)** (1.15, 2, 8, 8.39, 8.4, 10 lb/gal SC/L) (15%, 20%, 23.7%, 50%, 90% SC/L)** or 5 pt/A (1% RTU)	Use limited to professional pest control operators. Outdoor fogging application to areas such as ice-cream stands. Do not treat areas where food or feed crops are growing.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Eating Establishments (Outdoor) (continued)		
		0.04 lb/A (0.07 lb/gal RTU) or 0.5% finished spray [1.25-2.5 gal/A] (0.5% RTU)	Outdoor fogging application to areas such as ice-cream stands. Do not treat areas where food or feed crops are growing.
/730020A	Food Markets		
ISASAAA	Ants	0.5% finished spray (0.5 lb/gal EC) or -- (0.25%, 0.5% RTU)	Indoor treatment. Apply as a coarse, wet spray. For ants, apply to trails and places where ants enter premises such as window and door sills. For ants, cockroaches, crickets, silverfish and spiders, spray directly on pests where possible. Also spray trails and surfaces where pests may breed or congregate, such as under sinks, drainboards, door sills, door frames and window frames. For clover mites, crickets, earwigs, millipedes, centipedes, sowbugs, scorpions and spiders, thoroughly spray the interior and the exterior perimeter of infested premises. For clover mites, give special attention to window sills. For firebrats, booklouse and silverfish, apply to localized areas infested by these pests. For stored product insects, thoroughly treat floors and the walls of the infested area paying special attention to cracks, crevices, corners and perimeters. Sanitation and dust control are of primary importance. Repeat as needed. Formulated with one or a combination of: methylene chloride; propoxur; MGK 264; ronnel; piperonyl butoxide; or pyrethrins.
IMMDADA	Booklouse complex		
IJEBAAA	Centipedes		
IVAAABA	Cockroaches		
ILAVABA	Clover mite		
IVAHAAA	Crickets		
IMDAAAA	Earwigs		
IMPBABA	Firebrats		
IJCAAAA	Millipedes		
IJEBAAA	Scorpions		
IMPBACA	Silverfish		
IIFAAEA	Sowbugs		
IKAAAAA	Spiders		
IMAAAFA	Stored product insects (exposed)		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Food Markets (continued)		
ILABAFA	Cheese mite	10 g/10,000 cu.ft (2.95% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly. Unwrapped or unpackaged foods should be removed during treatment. Food handling equipment and dishes should be washed thoroughly after application. All food processing surfaces should also be covered during treatment or thoroughly cleaned before processing is resumed. When using in these areas, apply only when facility is not in operation.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediteranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
IVAAABA	Cockroaches	0.5% finished spray [0.4-1.6 gal/64,000 cu.ft] (0.5% RTU)	Use limited to professional pest control operators. Space treatment. Formulated with one or a combination of: MGK 264; ronnel; piperonyl butoxide; pyrethrins; or tetrachloroethylene.
IMNAAAA	Fleas		
IDAAAAA	Flies (including gnats and mosquitoes)		
ITAAAHA	Grain moth		
ITBMCJA	Meal moth		
IMPBACA	Silverfish		
IKAAAAA	Spiders		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Food Markets (continued)		
IDAAAAA	Flies (including blow flies, house fly and stable fly)	0.9-1.2 oz/ 5,000 sq.ft or 4.8-7.2 oz/ 5,000 sq.ft (0.6% G)	Bait application in and around markets. For adults, scatter where flies congregate over large enough area that all flies have an opportunity to feed upon or touch the formulation in a short period of time. Also treat as many places as possible where formulation may remain dry and uncovered. Apply 5 times weekly until fly population is reduced, then repeat as needed. For maggots, scatter evenly and thoroughly over the entire infested area. Use 6 inches or more around all sides. For both adults and maggots, apply higher rate to ground floors, ledges, window sills, shelves, litter, garbage and similar areas where flies congregate and breed. Apply evenly and thoroughly to breeding areas. Repeat as needed. May be formulated with malathion.
/730020A	Food Markets (Outside)		
IDAAAAA	Flies	0.5 oz/5,000 sq.ft (0.5% D)	Bait application. Apply in strips where flies gather. If flies are extremely numerous, a higher dosage may be needed.
		0.4 lb/gal (0.5 lb/gal EC)	Use limited to professional pest control operators. Outdoor application. Spray outside and around entrances and doorways, refuse areas and other areas where flies congregate.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/71000JB	Food Processing, Handling and Storage Plants/Areas (Indoor, Edible)		
ISASAAA	Ants	0.5% finished spray (2, 4 lb/gal EC) (20% EC) (2 lb/gal SC/L) (50% SC/L) or 1% finished spray (1% RTU) --OR MAI-- 0.1-0.56% finished spray (0.2, 0.25, 0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (1%, 5.19%, 8%, 9%, 9.81%, 12%, 12.31% EC) or -- (0.55%, 0.75% RTU) or 1-3 sec/linear ft (0.25% PrL)	Use limited to professional pest control operators. Crack and crevice treatment. Apply a small amount directly into cracks and crevices such as expansion joints between different elements of construction, or between equipment bases and the floor, wall voids, or hollow equipment legs where pests hide. Care should be taken to avoid depositing the formulation onto exposed surfaces or introducing into air. Avoid contamination of food or food processing surfaces. Do not use on carpets. Do not apply water diluted finished sprays in conduits, motor houses and electrical switch boxes. OR MAI Formulated with one or a combination of: d-trans allethrin; propoxur; malathion; ronnel; or chlorpyrifos.
IVAAABA	Cockroaches		
IMPBACA	Silverfish		
IKAAAAA	Spiders		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Food Processing, Handling and Storage Plants/Areas (Indoor, Edible) (continued)		
ILABAFA	Cheese mite	10 g/10,000 cu.ft (2.95% PrL) or 18-33.6 g/10,000 cu.ft (5.37%, 7% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly. Unwrapped or unpackaged foods should be removed during treatment. Food handling equipment and dishes should be washed thoroughly after application. All food processing surfaces should be covered during treatment or thoroughly cleaned before processing is resumed. When using in these areas, apply only when facility is not in operation.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
IDAAAAA	Flies	-- (0.5% G) --OR MAI-- -- (0.25% G)	Bait application. Apply only when facility is not in operation and food is not exposed. Use only in bait boxes where bait in each box can be accounted for. Remove and account for all bait boxes prior to resuming food processing. OR MAI Formulated with ronnel.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/71000JC	Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible)		Inedible areas include garbage rooms, lavatories, floor drains (sewers), entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets and storage (after canning and bottling).
ISASAAA	Ants	5 oz/5,000 sq.ft (0.5% G)	Indoor treatment. Spread over infested areas, hiding places and adjacent exposed surfaces to control ants, cockroaches and spiders. Repeat as needed. Formulated with formaldehyde, malathion, alkyl*dimethyl benzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14), and alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18).
INATAFA	Carpet beetle		
IJBAAAA	Centipedes		
IVAAABA	Cockroaches		
IVAHAAA	Crickets		
INATAAA	Dermestid beetles		
IMDAAAA	Earwigs		
IMNAAAA	Fleas		
IOAAAAA	Flies (including Drosophila, gnats and mosquitoes)		
IJCAAAA	Millipedes		
ITAAABA	Moths		
IMMAAAA	Psocids	0.5% finished spray (0.5, 1.16, 1.4, 1.59, 2, 4, 4.48 lb/gal EC) (1.15 lb/gal SC/L) (23.7%, 50% SC/L) (0.07 lb/gal RTU) or 1% finished spray [5 pt/5,000 sq.ft] (5% EC) (5% SC/L) (1% RTU) or	Use limited to professional pest control operators. Indoor treatment. Five percent soluble concentrate formulation authorized for use in federally inspected meat and poultry plants. Apply as a coarse, wet spray where pests hide or congregate around baseboards, cracks, walls, floors, door and window frames, and localized areas of floors. OR MAI May be formulated with one or a combination of: d-trans allethrin; methylene chloride; propoxur; fenthion; MGK 264; malathion; diazinon; ronnel; chlorpyrifos; piperonyl butoxide; or pyrethrins.
IMPBACA	Silverfish		
IIFAAEA	Sowbugs		
IKAAAAA	Spiders		
IMAAAFA	Stored product insects (exposed)		
ILAAACA	Ticks (including brown dog tick)		
ISAAADA	Wasps		

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible) (continued)		
	--OR MAI-- 0.07-0.5% finished spray (0.2, 0.5, 0.6, 0.63, 0.67, 1 lb/gal EC) (1%, 2.89%, 5.19%, 8%, 9%, 10%, 12%, 12.31% EC) (0.5%, 5.05%, 50% SC/L) or -- (0.25 lb/gal RTU) (0.5%, 0.55%, 0.75%, 1% RTU)	
	-- (0.5% RTU) (0.5% PrL)	Indoor treatment. Spray directly into cracks of woodwork, walls, floors, around door and window frames, baseboards and behind shelving of storage areas. Also spray localized areas such as beneath and behind stoves, refrigerators, cabinets, storage areas and equipment. Spray ant trails around doors and window sills.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible) (continued)		
	1% finished spray [1 gal/64,000 cu. ft] (1.16, 1.59, 2, 4, 4.48 lb/gal EC) (1.15, 2, 8.39, 10 lb/gal SC/L) (0.07 lb/gal RTU) (1% RTU) or 1-3% finished spray [1 gal/64,000 cu. ft] (1%, 5%, 23.7%, 50% SC/L) or 0.5% finished spray [2 gal/64,000 cu. ft] (0.5% RTU)	Use limited to professional pest control operators. Space treatment. Apply with fogging or misting equipment. For _ants_, _cockroaches_ and _silverfish_, the fog should be directed into cracks and crevices and hiding places. OR MAI Formulated with one or a combination of: stabilene; MGK 264; malathion; ronnel; piperonyl butoxide; pyrethrins; or tetrachloroethylene.
	--OR MAI--	
	0.5% finished spray [0.4-1.6 gal/64,000 cu. ft] (0.5% RTU) or 1% finished spray [1 gal/64,000 cu. ft] (1% SC/L) (1% RTU)	

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible) (continued)		
	0.5% finished spray [10-15 sec/ 1,000 cu. ft] (14% EC)	Use limited to professional pest control operators. Space treatment. Apply with a low pressure sprayer to localized areas pests may infest. Spray upwards towards the ceiling for 10 to 15 seconds per 1,000 cubic feet. Close windows for approximately 15 minutes after treatment.
	5 g/4,000-6,000 cu. ft (2.95% PrL)	Use limited to professional pest control operators. Space treatment. Place canister on table or elevation in center of area to be treated or near point of greatest infestation. Place newspaper under canister. Snap lock-open nozzle over lip of container. The area to be treated should be closed for a minimum of 45 to 60 minutes. After treatment, ventilate for a minimum 30 minutes before reentry.
	10-15 sec/ 1,000 cu. ft (0.5% PrL)	Space treatment. Spray upwards into 4 corners of room. Close windows for about 15 mintues, after treatment. Repeat as needed.
	--OR MAI--	OR MAI
	10-15 sec/ 1,000 cu. ft (0.5% RTU)	Formulated with one or a combination of: MGK 264; piperonyl butoxide; or pyrethrins.

Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible) (continued)

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
INBUATA INBJACA ITBMCHA	Confused flour beetle Driedfruit beetle Indianmeal moth	0.5% finished spray [0.5 gal/ 50,000 cu.ft] (0.5% SC/L) (0.5% RTU) or 1% finished spray [1 gal/ 50,000 cu.ft] (1% RTU)	Use limited to professional pest control operators. Ultra low volume space spray to empty dried fruit storage areas or processing areas. Direct spray into areas frequented by these pests. Allow room to remain closed for 1 hour after application. Repeat at 30 day intervals. Formulated with one or a combination of: d-trans allethrin; MGK 264; ronnel; piperonyl butoxide; or pyrethrins.
IDAAAAA	Flies	1 oz/5,000 sq.ft [dry bait] or 0.16 oz/gal [liquid bait] (0.5% G) --OR MAI-- 0.1 oz/5,000 sq.ft [dry bait] or 0.16 oz/gal [liquid bait] (0.5% G)	Bait application. Scatter dry bait lightly on floors, window sills and other horizontal areas where flies alight. Moistening surface before application gives faster kill. As a spray, apply to walls, paint on sills or make bait stations. These consist of paper towels or cloth saturated with spray solution and placed on metal or paper plates. Repeat as needed. When bait stations become dry, moisten with water. OR MAI Formulated with trichlorfon.
		0.9-1.2 oz/ 5,000 sq.ft or 4.8-7.2 oz/ 5,000 sq.ft (0.6% G)	Bait application in and around food and meat processing plants. For adults, scatter where flies congregate over large enough area that all flies have an opportunity to feed upon or touch the formulation in a short period of time. Also treat as many places as possible where formulation may remain dry and uncovered. Apply 5 times weekly until fly population is reduced, then repeat as needed. For maggots, scatter

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Food Processing, Handling and Storage Plants/Areas (Indoor, Inedible) (continued)		
			evenly and thoroughly over the entire infested area. Use 6 inches or more around all sides. For both adults and maggots, apply higher rate to ground floors, ledges, window sills, shelves, litter, garbage and similar areas where flies congregate and breed. Apply evenly and thoroughly to breeding areas. Repeat as needed. May be formulated with malathion.
		resin strip -- (20% Impr)	Insecticidal strip.
/710000A	Food Processing, Handling and Storage Plants/Areas (Outdoor)		Dichlorvos is classified as a RESTRICTED USE PESTICIDE when used as a mosquito larvicide/adulticide on this site (due to toxicity to birds and aquatic organisms.
IOAAAAA	Flies (including house fly)	0.5 oz/5,000 sq.ft (0.5% D)	Bait application. Apply in strips where flies gather. If flies are extremely numerous, a higher dosage may be needed.
		0.13-0.2 oz/5,000 sq.ft [dry bait] (0.5%, 1% G) or 0.16 oz/gal [liquid bait] (1% G)	Bait application. Sprinkle lightly on floors, walks, alley-ways and other horizontal surfaces where flies congregate. OR MAI May be formulated with one or a combination of: propoxur; ronnel; or (Z)-9-tricosene.
		--OR MAI--	
		0.017-0.04 oz/5,000 sq.ft (0.043%, 0.1% G) or	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Food Processing, Handling and Storage Plants/Areas (Outdoor) (continued)		
		-- [dry bait] or 1.6 oz/gal [liquid bait] (0.1% G)	
		1 gal 1.5% or 2.5% EC/24 gal (1.5%, 2.5% EC)	Outdoor application. Spray exposed areas such as walls, fences and refuse containers. Repeat as needed. Formulated with dimethoate.
ISASAAA IVAAABA IOAAAAA IIFAAEA	Ants Cockroaches Flies (including gnats and mosquitoes) Sowbugs	0.5% finished spray (0.5, 1 lb/gal EC)	Use limited to professional pest control operators. Outdoor application. Spray outside and around entrances and doorways, refuse areas and other areas where pests congregate.
IOAAAAA ITAAABA ISAAADA	Flies (including gnats and mosquitoes) Moths Wasps (including hornets)	-- (0.5% PrL)	Outdoor application. Thoroughly mist outdoor areas when air is quiet. Repeat as needed.
/740000A	Hospitals and Related Institutions (Indoor)		
ISASAAA IVAAABA IVAHAAA IMPBABA IMNAAAA IMPBACA IKAAAAA	Ants Cockroaches Crickets Firebrats Fleas Silverfish Spiders	0.07-0.5% finished spray (0.2, 0.23, 0.5, 0.6, 0.63, 0.67 lb/gal EC) (5.19%, 9% EC) (1% SC/L) (0.25%, 0.5% RTU)	Use limited to professional pest control operators. Indoor treatment. Apply as a coarse, wet spray where pests hide or congregate around baseboards, cracks, walls, floors, door and window frames and localized areas of floors. May be formulated with one or a combination of: propoxur; MGK 264; chlorpyrifos; piperonyl butoxide; or pyrethrins.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Hospitals and Related Institutions (Indoor) (continued)		
IVAAABA	Cockroaches	0.5% finished spray [0.4-1.6 gal/64,000 cu.ft] (0.5% RTU)	Use limited to professional pest control operators. Space treatment. Formulated with MGK 264; piperonyl butoxide; and pyrethrins.
IVAHAAA	Crickets		
IMOAAAA	Flies (including gnats and mosquitoes)		
ILABAFA	Cheese mite	total release 10 g/10,000 cu.ft (2.95% PrL)	Use limited to professional pest control operators. Indoor fogging application. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave premises immediately. The entire contents will be released automatically. Open cabinets and doors to areas to be treated. After application, do not reoccupy premises for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IOAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grainbeetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
	(Veterinary Hospitals (Indoor))		
IOAAAAA	Flies	0.12 oz/gal (2, 4 lb/gal EC)	Use limited to professional pest control operators. Bait application. Spot spray or apply on floor areas where flies congregate. Repeat as needed. Mix with powdered sugar.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/740000A	Hospitals and Related Institutions (Outdoor)		
IDAAAAA	Flies	0.5 oz/5,000 sq.ft (0.5% D)	Bait application. Apply in strips where flies gather. If flies are extremely numerous, a higher dosage may be needed.
/900100A	Insect Traps		
		This site occurs only on Special Local Needs (SLN) labels and the uses have not been included in the report.	
/900040A	Museum Collections		
IMAAAAA	Insects	resin strips 1 strip/ 1,000 cu.ft (20% Impr) or 1 strip/100 cu.ft (20% Impr)	Insecticidal strip. Hang strip to control insects in museum collections in enclosed spaces including closed display cabinets, display drawers, closed storage cabinets and chests.
		This site also occurs on Special Local Needs (SLN) labels but its uses have not been included in the report.	
/700110A	Railroad Cars (Feed/Food-Empty)		
ISASAAA	Ants	10 g/10,000 cu.ft (2.95% PrL) or 18-33.6 g/ 10,000 cu.ft (5.37%, 7% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave car immediately. The entire contents will be released automatically. After application, do not reoccupy car for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly.
INBVACA	Cadelle		
ILABAFA	Cheese mite		
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INATAAA	Dermestid beetles		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)	0.5% finished spray (0.5% RTU)	Space treatment. Apply before filling with grain, feed or food products. Repeat as needed. Formulated with MGK 264, piperonyl butoxide, and pyrethrins.
INASDQA	Granary weevil		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Railroad Cars (Feed/Food-Empty) (continued)		
	Pest list continued from previous page.		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		
IKAAAAA	Spiders		
ISAAADA	Wasps		
/700170A	Trucks (Feed/Food-Empty)		
ILABAFA	Cheese mite	5 g/5,000 cu. ft (2.95% PrL)	Use limited to professional pest control operators. Space treatment. Place can in center of area to be treated. Place newspaper under can. Release contents from can and leave truck immediately. The entire contents will be released automatically. After application, do not reoccupy truck for at least 2 hours. Before reoccupying open all doors and windows and ventilate thoroughly.
INABADA	Cigarette beetle		
IVAAABA	Cockroaches		
INBUATA	Confused flour beetle		
IVAHAAA	Crickets		
INABAEA	Drugstore beetle		
IMNAAAA	Fleas		
IDAAAAA	Flies (including cheese skipper, gnats and mosquitoes)		
INASDQA	Granary weevil		
INBUABA	Mealworms		
ITAAABA	Moths (including angoumois grain moth and Mediterranean flour moth)		
INBUASA	Red flour beetle		
INASDRA	Rice weevil		
INARAGA	Sawtoothed grain beetle		
IMPBACA	Silverfish		
INBOAAA	Spider beetles		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Trucks (Feed/Food-Empty) (continued)		
IKAAAAA	Spiders		
ISAAADA	Wasps		
/710100A	Wineries, Wine Cellars		
IDAPABA	Drosophila	1% finished spray [1 gal/ 64,000 cu.ft] (2 lb/gal SC/L) (50% SC/L) (1% RTU)	Use limited to professional pest control operators. Space treatment. Apply as a fog when the winery is not in operation. Make applications 2 or 3 times a week depending upon the actual fruit fly population. Make areas to be treated as airtight as possible by closing large ventilators, doors, windows, etc. Keep closed for at least 15 mintues after treatment. Occupants should vacate before indoor treatments and should not reoccupy the premises until it has been ventilated. After application open several windows or doors to create air currents to ensure reduction of vapors.

AERIAL, MOTHPROOFING AND TANK MIX APPLICATIONS

9001500 AAAAAAA	Aerial Application		
	--	Refer to AQUATIC NON-FOOD CROP (Aquatic Sites)	Intermittently Flooded Areas, Stagnant Water (Temporary), Catch Basins, Swamps, Marshes, Standing Water, Stagnant Water (Permanent)
9000900 AAAAAAA	Mothproofing		
	--	Refer to INDOOR (Household)	Domestic Dwelling Contents

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
9900300 AAAAAAA	Tank Mix		
	--	Refer to INDOOR (Household)	
			Domestic Dwellings (Indoor)

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Listing of Registered Pesticide Products by Formulation

&093.0001 93% technical chemical
2,2-dichlorovinyl dimethyl phosphate (084001)
000908-00043*
*jacket currently unavailable for review

&099.9901 100% technical chemical
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00125 000201-00361 005481-00096 007319-00004
010412-00001 010884-00001 047916-00036 048273-00001

&102.0002 2 lb/gal formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001)
000665-00358 000655-00432

&104.0002 4 lb/gal formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
009591-00022

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00229

&200.2502 0.25% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000148-01188

&200.5002 0.5% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000148-01186

&201.4602 1.46% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloneptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01112

&201.5302 1.53% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus methoxychlor, technical (034001)
000904-00403

&201.6702 1.67% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus methoxychlor, technical (034001)
000148-01185

Listing of Registered Pesticide Products by Formulation (continued)

&202.0402 2.04% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus pyrethrins (069001)
001021-00757

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01138

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01081

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01044

&202.1402 2.14% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), 1,1-bis(chlorophenyl)-2,2,2-trichloroethanol (010501) plus o-isopropylphenyl methylcarbamate (047802)
000655-00338

&202.5502 2.55% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
001021-01222

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus pyrethrins (069001)
001021-01033

&203.3302 3.33% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004816-00627

&203.3302 3.333% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004816-00527

&203.4002 3.4% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00767

&203.7702 3.778% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), allethrin (allyl homolog of cinerin I) (004001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503) plus piperonyl butoxide, technical (067501)

001021-01179

&204.0012 4% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-01504

&204.7002 4.7% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001)

002724-00206 002724-00212 002724-00214 002724-00216
002724-00231 002724-00232

&005.0002 5% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001)

000677-00410

&205.1002 5.1% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-01150 001021-01325*

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2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-01265

&206.6002 6.67% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-00806

&009.0002 9% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001)

002724-00208 002724-00209 002724-00213 002724-00215
002724-00229 002724-00230

&010.0002 10% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001)

000201-00170

Listing of Registered Pesticide Products by Formulation (continued)

10% formulation intermediate (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000908-00027

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00275

2,2-dichlorovinyl dimethyl phosphate (084001), d-trans allethrin (allyl homolog of cinerin I) (004003), petroleum distillate (063503) plus (3-phenoxyphenyl)methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate (069005)
001021-01452

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00984

2,2-dichlorovinyl dimethyl phosphate (084001), d-trans allethrin (allyl homolog of cinerin I) (004003), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), chlorpyrifos (059101), petroleum distillate (063503) plus piperonyl butoxide, technical (067501)
001021-01463

8010.2002 10.2% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01113

2,2-dichlorovinyl dimethyl phosphate (084001), 2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde (043302), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00904

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), chlorpyrifos (059101), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01311*
*jacket currently unavailable for review

Listing of Registered Pesticide Products by Formulation (continued)

&210.7502 10.75% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus xylene range aromatic solvent (086803)
000655-00299

&210.8002 10.8% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus o-isopropylphenyl methylcarbamate (047802)
000655-00454

&211.3402 11.34% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01124

&212.5002 12.5% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
000655-00639** 000655-00699 000655-00700
**undergoing cancellation process

&212.7502 12.75% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonal bis[2-(2-butoxyethoxy)ethyl] acetal (068801) plus pyrethrins (069001)
001021-01041

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00986 001021-01259

&213.4502 13.45% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus 1,1,1-trichloroethane (081201)
000904-00383**
**undergoing cancellation process

&215.0002 15% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
000655-00670 000655-00671

&217.0002 17% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-00765 001021-00780

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-00952

&218.5502 18.55% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001021-00907

&218.7502 18.75% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus xylene range aromatic solvent (086803)

004816-00656

&020.0002 20% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001)

002724-00207 002724-00210 002724-00211 002724-00248
003696-00123

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)

000655-00292

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), tetramethrin (069003) plus (3-phenoxyphenyl)-methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate (069005)

001021-01456

&220.4002 20.4% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001), allethrin (allyl homolog of cinerin I) (004001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503) plus piperonyl butoxide, technical (067501)

001021-01176

Listing of Registered Pesticide Products by Formulation (continued)

20.4% formulation intermediate (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00879   001021-00946

2,2-dichlorovinyl dimethyl phosphate (084001), 2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde (043302), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00808

&225.0002 25% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus xylene range aromatic solvent (086803)
000655-00651

&225.5002 25.5% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01361

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01157

&226.9002 26.9% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801), xylene range aromatic solvent (086803)
000655-00483

&227.2002 27.2% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), 2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde (043302), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00760

&233.3002 33.3% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)
000655-00340

Listing of Registered Pesticide Products by Formulation (continued)

&234.0002 34% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01107

&235.8002 35.8% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)
000655-00317

&040.8002 40.8% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00789

2,2-dichlorovinyl dimethyl phosphate (084001), 2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde (043302), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00759

&243.6502 43.65% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
000904-00344**
**undergoing cancellation process

&250.0002 50% formulation intermediate
2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
000904-00381**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
050534-00074

2,2-dichlorovinyl dimethyl phosphate (084001) plus tetrachloroethylene (078501)
000904-00346**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
000904-00340**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00196 000655-00294

Listing of Registered Pesticide Products by Formulation (continued)

&290.0002 90% formulation intermediate

2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)

000904-00396**

**undergoing cancellation process

&001.0003 1% dust

2,2-dichlorovinyl dimethyl phosphate (084001)

000201-00241

&000.0404 0.043% granular

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus (Z)-9-tricosene (103201)

002724-00265

&000.1004 0.1% granular

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)

002217-00614 002217-00619 002491-00266 002724-00162
002724-00187 002724-00251 040940-00009

&000.2504 0.25% granular

2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate (057901)

000602-00051 000602-00053

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)

047000-00046

&000.5004 0.5% granular

2,2-dichlorovinyl dimethyl phosphate (084001)

000059-00075 000070-00038 000070-00175 000108-00038
000150-00024** 000402-00073 000404-00328 000407-00324
000677-00370 000746-00091 000995-00045 001269-00068
001553-00048 001927-00044 002006-00039 002217-00282
002393-00362 003314-00033 003635-00094 004887-00083
005602-00049 006900-00085 007273-00105 009114-00006
011849-00017 011885-00005** 012454-00001 014651-00014
047000-00031

**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus malathion (057701)

001421-00183

2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate (057901)

000419-00163** 001386-00055 002270-00254 004816-00363

**undergoing cancellation process

Listing of Registered Pesticide Products by Formulation (continued)

0.5% granular (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)
000407-00342   044215-00043

2,2-dichlorovinyl dimethyl phosphate (084001), formaldehyde (043001), malathion (057701), petroleum distillate (063503), alkyl*dimethyl benzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14) (069104) plus alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18) (069167)
006621-00006

&000.6004 0.6% granular

2,2-dichlorovinyl dimethyl phosphate (084001) plus malathion (057701)
001203-00048

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)
001203-00046   007455-00010

&001.0004 1% granular

2,2-dichlorovinyl dimethyl phosphate (084001)
000052-00187   001769-00219   002098-00021**   002491-00255
005481-00009   005481-00039   005481-00051   006720-00058
009859-00035   038758-00001   047000-00043
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
006959-00017

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)
044215-00027

&005.0004 5% granular

2,2-dichlorovinyl dimethyl phosphate (084001)
000572-00133**
**undergoing cancellation process

&020.0004 20% granular

2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00261

&000.2505 0.25% pelleted/tableted

2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate (057901)
000602-00090

Listing of Registered Pesticide Products by Formulation (continued)

0.25% pelleted/tableted (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)
001663-00012* 005481-00024 004236-00003**
*jacket currently unavailable for review
**undergoing cancellation process

&017.5005 17.5% pelleted/tableted
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00335*
*jacket currently unavailable for review

&017.8005 17.8% pelleted/tableted
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00257*
*jacket currently unavailable for review

&031.0005 31% pelleted/tableted
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00329*
*jacket currently unavailable for review

&000.8806 0.875% wettable powder
2,2-dichlorovinyl dimethyl phosphate (084001)
008590-00168

&000.5007 0.5% wettable powder/dust
2,2-dichlorovinyl dimethyl phosphate (084001)
000240-00184** 003509-00095*
*jacket currently unavailable for review
**undergoing cancellation process

&004.7010 4.7% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000677-00402 000677-00403 000778-00024 002596-00035
002724-00159 002724-00166 002724-00189 002724-00195
002724-00237 042836-00003

&005.0010 5% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
050534-00068

&009.0010 9% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
002596-00034 002596-00036 002724-00147 002724-00153
002724-00168 002724-00172 002724-00194 002724-00236
005887-00139 020954-00110 042836-00001 042836-00002
042836-00003

Listing of Registered Pesticide Products by Formulation (continued)

&009.6010 9.6% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000677-00400 000677-00401 000778-00021

&009.9510 9.95% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
008730-00032

&010.0010 10% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000677-00372 005887-00140 036488-00005 050534-00006
050534-00070

&011.8010 11.8% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
001327-00036

&015.0010 15% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000677-00397 003696-00086

2,2-dichlorovinyl dimethyl phosphate (084001) plus 2-naphthol (010301)
000270-00111

&019.2010 19.2% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
003696-00083

&020.0010 20% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00138 000201-00236 000602-00113 000677-00393
000677-00406 000677-00408 000677-00409 000778-00028
000778-00033 000778-00035 002393-00372 002596-00037
002596-00038 002596-00039 002596-00040 002596-00048
002596-00060 002724-00106 002724-00129 002724-00167
002724-00178 002724-00184 002724-00191 002724-00196
002724-00197 002724-00198 002724-00199 002724-00200
002724-00235 002724-00238 003590-00003 003696-00082
003696-00084 003696-00085 003696-00087 003696-00088
003696-00089 003696-00090 003696-00091 003696-00092
003696-00093 003696-00117 003696-00121 003696-00122
004822-00080 007056-00046 007056-00060 007056-00068
007056-00069 007273-00032 015577-00002 015577-00003
015577-00004 054543-00001

&054.0010 54% impregnated materials
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00282

Listing of Registered Pesticide Products by Formulation (continued)

&100.2012 0.2 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
001769-00233

&100.2312 0.23 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
010827-00066

&100.2512 0.25 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
006720-00203 009782-00027

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus chlorpyrifos (059101)
002169-00284

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
003314-00067

&100.5012 0.5 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
042057-00045

2,2-dichlorovinyl dimethyl phosphate (084001) plus chlorpyrifos (059101)
009782-00054

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus ronnel (058301)
005481-00014

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)
002169-00285

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
003314-00068 035455-00001

2,2-dichlorovinyl dimethyl phosphate (084001), 2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate (083701) plus xylene (086802)
000602-00177

Listing of Registered Pesticide Products by Formulation (continued)

&100.6012 0.6 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101), petroleum distillate (063503) plus xylene (086802)
000373-00100

&100.6312 0.63 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
009782-00019

&100.6712 0.67 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus chlorpyrifos (059101)
008612-00106

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus chlorpyrifos (059101)
004981-00062

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)
000464-00476

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
010370-00045

&100.8512 0.85 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
035455-00002

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
002217-00499 047000-00039

&101.0012 1 lb/gal emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
005481-00041

2,2-dichlorovinyl dimethyl phosphate (084001) plus tetrachloroethylene (078501)
007122-00046

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
000550-00133

Listing of Registered Pesticide Products by Formulation (continued)

1 lb/gal emulsifiable concentrate (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)
000876-00166 000876-00167 035455-00002

&101.16:2 1.16 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00009

&101.40:2 1.4 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000595-00304

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
002006-00605

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000476-01720

&101.59:2 1.59 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00007

&102.00:2 2 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001)
000072-00365

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
004887-00049 005481-00073 007122-00055

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
000904-00395 006900-00046

2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
040940-00013 047916-00018

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000201-00235 000201-00338 000677-00386 001348-00169
001990-00444 002491-00262 006900-00107 009859-00183
037686-00031 040831-00042 047000-00028 047000-00062

2 lb/gal emulsifiable concentrate (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
000602-00132 000677-00365 002217-00291 005602-00046
011849-00011

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00491 006720-00018 047916-00006

&104.0012 4 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
000904-00257 004887-00063 006900-00053

2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
000595-00238 040940-00014

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000201-00240 000551-00164 006754-00014 009859-00012
009859-00018 047000-00017 047000-00061

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
000201-00197 011849-00019

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000476-01801 000655-00692 047916-00005

2,2-dichlorovinyl dimethyl phosphate (084001), isooctyl phenoxy polyethoxy ethanol (079004) plus xylene (086802)
007234-00037

&104.4812 4.48 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00004

&105.3812 5.38 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)
010692-00006

&105.5012 5.5 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus tetrachloroethylene (078501)
007122-00063

Listing of Registered Pesticide Products by Formulation (continued)

&110.0012 10 lb/gal emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001)

000201-00146

&200.4212 0.42% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)

006720-00235

&200.5012 0.5% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus xylene (086802)

006248-00010*

*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)

006248-00011

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)

010736-00003

&200.5412 0.54% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), dioxathion (037801) plus xylene range aromatic solvent (086803)

002724-00014   002724-00080   002724-00283   002724-00285

&200.6012 0.6% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

008789-00002

&200.7512 0.75% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus methoxychlor, technical (034001)

001769-00137   010827-00045   011694-00014

&200.9412 0.94% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus dimethoate (035001)

000270-00039

Listing of Registered Pesticide Products by Formulation (continued)

&201.0012 1% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
002724-00101

2,2-dichlorovinyl dimethyl phosphate (084001), lindane (gamma isomer of benzene hexachloride) (009001) plus xylene (086802)
001266-00076

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus xylene (086802)
044215-00029

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus xylene range aromatic solvent (086803)
002724-00099

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), o-isopropylphenyl methylcarbamate (047802) plus kerosene (063501)
001769-00184

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602), dioxathion (037801) plus pine oil (067002)
028293-00003 043288-00002

2,2-dichlorovinyl dimethyl phosphate (084001), 1,1-bis(ethylphenyl)-2,2-dichloroethane or diethyl diphenyl dichloroethane, and related compounds (032101), dioxathion (037801), petroleum distillate (063503) plus pine oil (067002)
002724-00065

&201.0712 1.07% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
047000-00034

&201.2612 1.26% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus methoxychlor, technical (034001)
010088-00077

&201.4012 1.4% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus fenthion (053301)
001769-00197

Listing of Registered Pesticide Products by Formulation (continued)

&201.5012 1.5% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus toxaphene (080501)
002724-00161

2,2-dichlorovinyl dimethyl phosphate (084001), dimethoate (035001) plus petroleum distillate (063503)
044215-00028

2,2-dichlorovinyl dimethyl phosphate (084001), cyclohexanone (025902), dimethoate (035001) plus petroleum distillate (063503)
002724-00140

2,2-dichlorovinyl dimethyl phosphate (084001), 2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801), dimethrin (034101), carbaryl (056801) plus petroleum distillate (063503)
002270-00039 002270-00123

&202.5012 2.5% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus methoxychlor, technical (034001)
001769-00200

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus dimethoate (035001)
000241-00210** 001386-00585
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
000070-00155 002217-00592

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
000572-00215 002393-00394 007273-00147 008590-00298
047000-00064 050534-00072*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus xylene (086802)
011849-00009

&202.5112 2.51% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
000134-00059

&202.8912 2.89% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), xylene (086802) plus xylene range aromatic solvent (086803)
005285-00033

&203.1712 3.17% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
009782-00027**
**undergoing cancellation process

&203.2012 3.2% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), o-dichlorobenzene (059401) plus petroleum distillate (063503)
008463-00023

&203.7512 3.75% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
040831-00063

&204.0012 4% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), 2-naphthol (010301) plus petroleum distillate (063503)
002270-00063

&204.2412 4.24% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), kerosene (063501), pine oil (067002), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000270-00148

&204.4912 4.49% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
004758-00096

&204.7012 4.7% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602), methoxychlor, technical (034001) plus malathion (057701)
008123-00033 010088-00075 010827-00047

&205.0012 5% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
005440-00114

Listing of Registered Pesticide Products by Formulation (continued)

5% emulsifiable concentrate (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
038733-00001*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301) plus xylene (086802)
001183-00015** 004758-00041
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
000572-00218**
**undergoing cancellation process

&205.1912 5.19% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101), xylene (086802) plus xylene range aromatic solvent (086803)
000655-00441 047916-00015

&205.7012 5.7% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), 2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate (083701) plus xylene (086802)
050534-00073 050534-00080 050534-00086 050534-00098
050534-00099

&205.8512 5.85% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101), tetrachloroethylene (078501) plus xylene range aromatic solvent (086803)
004887-00147**
**undergoing cancellation process

&206.0012 6% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001) plus chlorpyrifos (059101)
009782-00054**
**undergoing cancellation process

&206.3012 6.3% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)
000464-00521*
*jacket currently unavailable for review

Listing of Registered Pesticide Products by Formulation (continued)

&207.3512 7.35% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene range aromatic solvent (086803)
009782-00019**
**undergoing cancellation process

&209.0012 9% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101), xylene (086802) plus xylene range aromatic solvent (086803)
000655-00442

&209.8112 9.81% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), polychlorinated terphenyls (017802), ronnel (058301) plus xylene (086802)
005602-00051

&210.0012 10% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus ronnel (058301)
001941-00054

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), petroleum resins (011401) plus ronnel (058301)
007122-00022

&211.9512 11.95% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301), tetrachloroethylene (078501) plus xylene (086802)
004887-00084**
**undergoing cancellation process

&212.0012 12% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
006720-00154

&212.0112 12.01% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus chlorpyrifos (059101)
009782-00018*
*jacket currently unavailable for review

&212.3112 12.31% emulsifiable concentrate
2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus xylene (086802)
005602-00097

Listing of Registered Pesticide Products by Formulation (continued)

&214.0012 14% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000491-00175

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus 1,1,1-trichloroethane (081201)
004887-00160**
**undergoing cancellation process

&215.0012 15% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
002217-00463 040831-00029

&218.5012 18.5% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
002393-00364 007273-00116

&218.7512 18.75% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
000773-00045*
*jacket currently unavailable for review

&220.0012 20% emulsifiable concentrate

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
009114-00015 040831-00074

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
000059-00148 047916-00017

2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
047000-00011

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
000150-00026** 001307-00063*
*jacket currently unavailable for review
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00492 002724-00082

Listing of Registered Pesticide Products by Formulation (continued)

&222.3012 22.3% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
   000279-02144**
    **undergoing cancellation process

&223.4012 23.4% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus heavy aromatic naphtha (006602)
   000829-00179**
    **undergoing cancellation process

  2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
   050534-00061

&223.7012 23.7% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus kerosene (063501)
   003509-00067*
    *jacket currently unavailable for review

  2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
   000998-00067*
    *jacket currently unavailable for review

&223.8012 23.8% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
   001339-00163*
    *jacket currently unavailable for review

&243.2012 43.2% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
   050534-00082

&244.5012 44.5% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
   006720-00040*
    *jacket currently unavailable for review

&299.9912 100% emulsifiable concentrate
  2,2-dichlorovinyl dimethyl phosphate (084001)
   000802-00497**
    **undergoing cancellation process

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Listing of Registered Pesticide Products by Formulation (continued)

&100.0715 0.07 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
009859-00168

&101.1515 1.15 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00008

&102.0015 2 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
007122-00097

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000201-00250 006720-00025

&108.0015 8 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
040831-00067

&108.3915 8.39 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00003

&108.4015 8.4 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
040831-00069

&110.0015 10 lb/gal soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
040831-00068

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
047916-00002

&200.2515 0.25% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
000070-00130

0.25% soluble concentrate/liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), naled (034401) plus malathion (057701)
000541-00205**
**undergoing cancellation process

&200.5015 0.5% soluble concentrate/liquid

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), o-isopropylphenyl methylcarbamate (047802), malathion (057701) plus petroleum distillate (063503)
000402-00117

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-01315

&201.0015 1% soluble concentrate/liquid

2,2-dichlorovinyl dimethyl phosphate (084001) plus mineral oil (063502)
002006-00038 002006-00056

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000728-00059 001769-00216 008142-00001* 010551-00020*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601) plus N-octyl bicycloheptenedicarboximide (057001)
001421-00167*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus petroleum distillate (063503)
002393-00403

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502) plus petroleum distillate (063503)
001386-00574

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000108-00037

Listing of Registered Pesticide Products by Formulation (continued)

1% soluble concentrate/liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), methylene chloride (042004), o-isopropylphenyl methylcarbamate (047802), ronnel (058301) plus petroleum distillate (063503)
001266-00154*
*jacket currently unavailable for review

&201.0215 1.025% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), naled (034401) plus malathion (057701)
000541-00170*
*jacket currently unavailable for review

&201.4015 1.4% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701), mineral oil (063502) plus petroleum distillate (063503)
001926-00018

&201.6215 1.62% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus petroleum distillate (063503)
007273-00119

&202.5015 2.5% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus methoxychlor, technical (034001)
010827-00043 011694-00063

2,2-dichlorovinyl dimethyl phosphate (084001), heavy aromatic naphtha (006602) plus methoxychlor, technical (034001)
000713-00012 040988-00005

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus petroleum distillate (063503)
007273-00120 007273-00121 007273-00124 010827-00046

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
005481-00049

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), malathion (057701), mineral oil (063502) plus petroleum distillate (063503)
001926-00058

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Listing of Registered Pesticide Products by Formulation (continued)

&202.7115 2.71% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
003367-00088*
*jacket currently unavailable for review

&203.5015 3.5% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701), mineral oil (063502) plus petroleum distillate (063503)
001926-00015

&204.4015 4.4% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), malathion (057701), mineral oil (063502) plus petroleum distillate (063503)
001926-00059

&205.0015 5% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
002270-00709

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000485-00047 000655-00536 002548-00071 011540-00008

2,2-dichlorovinyl dimethyl phosphate (084001), kerosene (063501) plus xylene range aromatic solvent (086803)
047916-00016

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), malathion (057701), mineral oil (063502) plus petroleum distillate (063503)
001926-00063

&205.0515 5.05% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), methoxychlor, technical (034001), petroleum distillate (063503) plus xylene (086802)
004828-00059

&206.0015 6% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus petroleum distillate (063503)
040831-00001

&210.0015 10% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), polychlorinated terphenyls (017802) plus ronnel (058301)
007122-00021

Listing of Registered Pesticide Products by Formulation (continued)

&212.5015 12.5% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000998-00065*
*jacket currently unavailable for review

&215.0015 15% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
040831-00018

&220.0015 20% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
005011-00075

&223.7015 23.7% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
008612-00034

&223.8015 23.8% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
001339-00162*
*jacket currently unavailable for review

&224.9015 24.9% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
004981-00028**
**undergoing cancellation process

&250.0015 50% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00199

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
006720-00252 006900-00065 007122-00107 040831-00064

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000201-00201 001348-00211 001990-00432 002217-00341
006720-00026

2,2-dichlorovinyl dimethyl phosphate (084001) plus tetrachloroethylene (078501)
004887-00078

Listing of Registered Pesticide Products by Formulation (continued)

50% soluble concentrate/liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)
047916-00010

&290.0015 90% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
006720-00027 047000-00036

&299.9915 100% soluble concentrate/liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00220

&100.7416 0.74 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus 1,1,1-trichloroethane (081201)
010692-00002

&100.8016 0.8 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000908-00033

&101.1316 1.13 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000908-00037

&101.9016 1.9 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000908-00040

&102.2016 2.2 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001)
000908-00036

2,2-dichlorovinyl dimethyl phosphate (084001) plus 1,1,1-trichloroethane (081201)
004887-00161

&104.0016 4 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum derivative solvent (006501)
000904-00117

&105.8016 5.8 lb/gal liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001)
000908-00042

Listing of Registered Pesticide Products by Formulation (continued)

&200.1916 0.194% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), kerosene (063501), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000270-00145

&200.2016 0.2% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
000070-00117 000475-00138 000475-00203 004822-00110

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000070-00011 000850-00012 001386-00009 008590-00027

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
003618-00016

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000099-00105

2,2-dichlorovinyl dimethyl phosphate (084001), dipropyl isocinchomeronate (047201), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001021-00694 001304-00054

&200.2016 0.2005% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002136-00032

&200.2516 0.25% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
011849-00008 014651-00010 050534-00058

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
009468-00009

Listing of Registered Pesticide Products by Formulation (continuec)

0.25% liquid-ready to use (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus mineral oil (063502)

000746-00104

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)

000072-00479 000134-00054 000228-00083 000407-00335
000572-00150 000572-00207 000602-00186 000606-00098
001157-00037 001381-00070 001381-00092 001386-00551
001990-00442* 002006-00046 002217-00452 002342-00921**
002435-00010 002491-00256 004591-00039* 005481-00069
007273-00111 007455-00017 008590-00382 040831-00031
047000-00013 050415-00073 050415-00079

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2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus 2-chloro-1-(2,4,5-tricnlorophenyl)vinyl dimethyl phosphate (083701)

050534-00083

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502) plus petroleum distillate (063503)

002393-00380 005481-00146

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), petroleum distillate (063503) plus xylene (086802)

001304-00048*

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2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), petroleum distillate (063503) plus xylene range aromatic solvent (086803)

002217-00376

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101), petroleum distillate (063503) plus xylene range aromatic solvent (086803)

000655-00697 000655-00698

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502), piperonyl butoxide, technical (067501) plus pyrethrins (069001)

001386-00418

0.25% liquid-ready to use (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000572-00246 050415-00080

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
007056-00102 008590-00569

2,2-dichlorovinyl dimethyl phosphate (084001), dipropyl isocinchomeronate (047201), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
008590-00570

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000402-00095

2,2-dichlorovinyl dimethyl phosphate (084001), butoxypolypropylene glycol (011901), N-octyl bicycloheptenedicarboximide (057001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502), petroleum distillate (063503), pine oil (067002), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
028293-00012

&200.3016 0.3% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001), d-trans allethrin (allyl homolog of cinerin I) (004003), N-octyl bicycloheptenedicarboximide (057001) plus petroleum distillate (063503)
000478-00075

&200.3116 0.307% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001), essential oils (040501), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002136-00020

&200.4016 0.4% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001), fenthion (053301) plus petroleum distillate (063503)
002270-00114

Listing of Registered Pesticide Products by Formulation (continued)

&200.4416 0.44% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), mineral oil (063502), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000150-00009

&200.5016 0.5% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001) plus mineral oil (063502)
000004-00159

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000070-00072 000402-00083** 000839-00047 001269-00100
001270-00120 001348-00170 001750-00037 003509-00099*
047000-00023
*jacket currently unavailable for review
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), plus kerosene (063501)
009313-00008

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002) plus mineral oil (063502)
002491-00249 007273-00057

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501) plus chlorpyrifos (059101)
011214-00005**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), fenthion (053301) plus petroleum distillate (063503)
003624-00131 003624-00132

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus petroleum distillate (063503)
000255-00094*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
000255-00098 002270-00091 011746-00004

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301) plus petroleum distillate (063503)
001941-00017 002270-00092

Listing of Registered Pesticide Products by Formulation (continued)

0.5% liquid-ready to use (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
000655-00627   002391-00006   002391-00007   006248-00013*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), essential oils (040501), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
007992-00010

2,2-dichlorovinyl dimethyl phosphate (084001), methylene chloride (042004), ronnel (058301) plus petroleum distillate (063503)
003624-00099

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301), petroleum distillate (063503) plus xylene (086802)
007122-00036

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000572-00117   000655-00703   002270-00116   004704-00013

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), methylated aromatic petroleum derivatives or methylated naphthalenes (054002), mineral oil (063502) plus pyrethrins (069001)
000150-00031

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000402-00011   000402-00019   000541-00137   000541-00174
000655-00533   001021-01365   002270-00049   002270-00103
002270-00696   003624-00166   010359-00002**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002626-00010

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002393-00367

Listing of Registered Pesticide Products by Formulation (continued)

0.5% liquid-ready to use (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002724-00119

2,2-dichlorovinyl dimethyl phosphate (084001), dipropyl isocinchomeronate (047201), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000551-00269 004866-00003

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), petroleum distillate (063503),piperonyl butoxide, technical (067501) plus pyrethrins (069001)
001769-00146**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus tetrachloroethylene (078501)
000402-00090

&200.5116 0.51% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), dipropyl isocinchomeronate (047201), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
034797-00004

&200.5416 0.54% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), oil of citronella (021901), kerosene (063501), mineral oil (063502), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000270-00149

&200.5516 0.55% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), malathion (057701) plus petroleum distillate (063503)
001203-00035

&200.7516 0.75% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
002270-00054

&201.0016 1% liquid-ready to use

2,2-dichlorovinyl dimethyl phosphate (084001)
000677-00398

2,2-dichlorovinyl dimethyl phosphate (084001) plus dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801)
014651-00017

2,2-dichlorovinyl dimethyl phosphate (084001) plus kerosene (063501)
050415-00033*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001) plus mineral oil (063502)
002724-00098 006074-00002

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000228-00103 000400-00213 000438-00028 000572-00205
000595-00211 000655-00702 000865-00014** 000865-00015**
000904-00102 000995-00037 001111-00147** 001307-00091*
001348-00198 001381-00009 001381-00090 001990-00433
002124-00463* 002169-00219 002217-00332 002217-00340
002270-00187 002491-00254 002881-00017 003743-00153
005011-00070 005440-00064 009887-00010 011849-00031
042057-00067 047000-00052 050415-00076
*jacket currently unavailable for review
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), butoxypolypropylene glycol (011901) plus petroleum distillate (063503)
009887-00009

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701) plus xylene (086802)
006720-00073

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus mineral oil (063502)
000912-00030

2,2-dichlorovinyl dimethyl phosphate (084001), kerosene (063501) plus mineral oil (063502)
000407-00384 011849-00016 014651-00013 050534-00064

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502) plus petroleum distillate (063503)
000150-00034 000912-00031 002217-00450 002342-00825**
007273-00113 007455-00021 040831-00028
**undergoing cancellation process

Listing of Registered Pesticide Products by Formulation (continued)

1% liquid-ready to use (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502) plus pine oil (067002)
000746-00073

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus pine oil (067002)
000270-00053

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502) plus petroleum distillate (063503)
000059-00131 003624-00140 047000-00056

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000572-00135 000998-00066*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), mineral oil (063502), petroleum distillate (063503), piperonyl butoxide, technical (067501) pyrethrins (069001)
002393-00382

2,2-dichlorovinyl dimethyl phosphate (084001), allethrin (allyl homolog of cinerin I) (004001), N-octyl bicycloheptenedicarboximide (057001), kerosene (063501), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
003635-00083

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), mineral oil (063502), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000150-00035

&202.0016 2% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501), propylene glycol (068603), pyrethrins (069001) plus tetrachloroethylene (078501)
001421-00157

&204.9816 4.98% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000998-00126*
*jacket currently unavailable for review

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Listing of Registered Pesticide Products by Formulation (continued)

&205.0016 5% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
001021-01491

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus 1,1,1-trichloroethane (081201)
010692-00001

&208.0016 8% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), 1,1-bis(chlorophenyl)-2,2,2-trichloroethanol (010501) plus petroleum distillate (063503)
005011-00132

2,2-dichlorovinyl dimethyl phosphate (084001), 1,1-bis(chlorophenyl)-2,2,2-trichloroethanol (010501), ovex (020201) plus petroleum distillate (063503)
005011-00078*
*jacket currently unavailable for review

&208.7016 8.7% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), chlorpyrifos (059101) plus petroleum distillate (063503)
000998-00083*
*jacket currently unavailable for review

&210.0016 10% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001)
006218-00026

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
005011-00049 005011-00077 005011-00081 005602-00069
005602-00079 006218-00013 006218-00021 006218-00031

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene range aromatic solvent (086803)
000655-00730

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus 1,1,1-trichloroethane (081201)
005011-00093

&215.0016 15% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
005011-00085

Listing of Registered Pesticide Products by Formulation (continued)

&220.0016 20% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
005011-00086

&230.0016 30% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001)
009990-00001**
**undergoing cancellation process

&250.0016 50% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000998-00064*
*jacket currently unavailable for review

&299.9916 100% liquid-ready to use
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00145

&200.1019 0.1% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
000654-00107

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus methoprene (105401)
002724-00297

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), piperonyl butoxide, technical (067501), pyrethrins (069001) plus methoprene (105401)
002724-00301

&200.2019 0.2% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
000070-00118 000070-00136 000070-00138 000475-00136
000475-00137 000475-00185 000475-00228 000498-00121
003478-00022 004822-00111 011715-00109

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
000475-00181

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000706-00072

Listing of Registered Pesticide Products by Formulation (continued)

0.2% pressurized liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), 2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde (043302), malathion (057701), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000270-00124

&200.2519 0.25% pressurized liquid

2,2-dichlorovinyl dimethyl phosphate (084001) plus o-isopropylphenyl methylcarbamate (047802)
000654-00124

2,2-dichlorovinyl dimethyl phosphate (084001) plus chlorpyrifos (059101)
000654-00123

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
004822-00095 004822-00096

2,2-dichlorovinyl dimethyl phosphate (084001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801) plus petroleum distillate (063503)
004931-00098**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), butoxypolypropylene glycol (011901), N-octyl bicycloheptenedicarboximide (057001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002724-00109

2,2-dichlorovinyl dimethyl phosphate (084001), butoxypolypropylene glycol (011901), N-octyl bicycloheptenedicarboximide (057001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502), petroleum distillate (063503), pine oil (067002) plus pyrethrins (069001)
028293-00002

2,2-dichlorovinyl dimethyl phosphate (084001), butoxypolypropylene glycol (011901), N-octyl bicycloheptenedicarboximide (057001), dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate (058801), mineral oil (063502), petroleum distillate (063503), pine oil (067002), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
007056-00042

Listing of Registered Pesticide Products by Formulation (continued)

&200.2619 0.255% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
005130-00006

&200.3019 0.3% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
009444-00068

2,2-dichlorovinyl dimethyl phosphate (084001), d-trans allethrin (allyl homolog of cinerin I) (004003), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
007992-00016

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl sulfoxide of isosafrole (057101), petroleum distillate (063503) plus pyrethrins (069001)
000478-00089

&200.3519 0.35% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
000654-00112

&200.3619 0.36% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), 2-butoxyethanol (011501), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
001266-00131

&200.4719 0.465% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001) plus o-isopropylphenyl methylcarbamate (047802)
004822-00267

&200.5019 0.5% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
002724-00289 003125-00191 040018-00009 043288-00014
044446-00006

2,2-dichlorovinyl dimethyl phosphate (084001) plus aromatic petroleum distillate (006601)
005481-00013

2,2-dichlorovinyl dimethyl phosphate (084001) plus o-isopropylphenyl methylcarbamate (047802)
000270-00157 000778-00066 002724-00294 007056-00101
007992-00027 009444-00059 011561-00006 011715-00103
028293-00001 040018-00007 044446-00005 047834-00038
043288-00012

Listing of Registered Pesticide Products by Formulation (continued)

0.5% pressurized liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001) plus ronnel (058301)
002724-00201 007056-00077 007056-00079

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000148-00259 000201-00134 000746-00016 007056-00057
007319-00002

2,2-dichlorovinyl dimethyl phosphate (084001) plus pyrethrins (069001)
004822-00169

2,2-dichlorovinyl dimethyl phosphate (084001) plus xylene (086802)
008773-00006**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), methoxychlor, technical (034001) plus petroleum distillate (063503)
000706-00056 008856-00002

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus methoprene (105401)
002724-00293

2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
000655-00626 007992-00033

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301) plus petroleum distillate (063503)
000746-00012 002724-00134

2,2-dichlorovinyl dimethyl phosphate (084001), chlorpyrifos (059101) plus petroleum distillate (063503)
003696-00102* 003696-00104* 003696-00105* 003696-00106
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503) plus pyrethrins (069001)
000106-00062 007992-00034

2,2-dichlorovinyl dimethyl phosphate (084001), d-trans allethrin (allyl homolog of cinerin I) (004003), petroleum distillate (063503) plus (3-phenoxyphenyl)methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate (069005)
000499-00222 003282-00067 003696-00114 005748-00076
010807-00078 011715-00102 047000-00002

Listing of Registered Pesticide Products by Formulation (continued)

0.5% pressurized liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum derivative solvent (006501), chlorpyrifos (059101) plus kerosene (063501)
001769-00268

2,2-dichlorovinyl dimethyl phosphate (084001), aromatic petroleum distillate (006601), petroleum distillate (063503) plus resmethrin (097801)
011525-00029

2,2-dichlorovinyl dimethyl phosphate (084001), essential oils (040501), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
007992-00015

2,2-dichlorovinyl dimethyl phosphate (084001), essential oils (040501), petroleum distillate (063503) plus piperonyl butoxide, technical (067501)
007992-00014

2,2-dichlorovinyl dimethyl phosphate (084001), malathion (057701), petroleum distillate (063503) plus xylene (086802)
002125-00062

2,2-dichlorovinyl dimethyl phosphate (084001), p-dichlorobenzene (061501), petroleum distillate (063503), pine oil (067002)
007992-00009

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001)
000108-00042** 000201-00088 000201-00135 000402-00089**
000654-00073 001471-00039** 002393-00365 004887-00094
005778-00047 006957-00002*
*jacket currently unavailable for review
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), petroleum distillate (063503), tetramethrin (069003) plus (3-phenoxyphenyl)-methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate (069005)
033176-00003

2,2-dichlorovinyl dimethyl phosphate (084001), beta-butoxy beta'-thiocyano diethyl ether (010002), beta-thiocyanoethyl esters of mixed fatty acids of C10 to C18 (010101), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorotnioate (057801) plus petroleum distillate (063503)
002391-00003

Listing of Registered Pesticide Products by Formulation (continued)

0.5% pressurized liquid (continued)

2,2-dichlorovinyl dimethyl phosphate (084001), cyclohexanone (025902), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
003735-00023

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004758-00116   004758-00139

2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000869-00022** 002724-00142   002724-00149   004758-00121
007056-00022   007056-00036   007056-00037   011715-00039
011715-00074   011715-00123
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001), ronnel (058301), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004758-00047   004758-00091   005778-00030

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
002724-00303

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus methoprene (105401)
002724-00300

&200.5119 0.51% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), ronnel (058301), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
000257-00244

&200.5419 0.538% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (057801) plus petroleum distillate (063503)
009143-00047   047000-00063

Listing of Registered Pesticide Products by Formulation (continued)

&200.75:9 0.75% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00333

2,2-dichlorovinyl dimethyl phosphate (084001) plus petroleum distillate (063503)
000201-00334

&201.00:9 1% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
001187-00062*
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001) plus cottonseed oil (031602)
006959-00034

&202.0019 2% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus petroleum distillate (063503)
000475-00158

&202.5019 2.5% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), N-octyl bicycloheptenedicarboximide (057001), petroleum distillate (063503), piperonyl butoxide, technical (067501), pyrethrins (069001) plus 1,1,1-trichloroethane (081201)
001814-00029

&202.9519 2.95% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
001187-00063 001187-00130 002270-00135

&203.2319 3.23% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004758-00127

&205.00:9 5% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00165

2,2-dichlorovinyl dimethyl phosphate (084001), piperonyl butoxide, technical (067501) plus pyrethrins (069001)
004758-00090

&205.37:9 5.37% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000257-00294 011561-00001 011561-00004

&207.0019 7% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
001187-00129 004758-00082* 009444-00032
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001) plus o-isopropylphenyl methylcarbamate (047802)
004758-00045* 011561-00005 047834-00037
*jacket currently unavailable for review

2,2-dichlorovinyl dimethyl phosphate (084001) plus methoprene (105401)
004758-00138

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802) plus xylene (086802)
009444-00036

2,2-dichlorovinyl dimethyl phosphate (084001), kerosene (063501) plus xylene (086802)
005602-00135

2,2-dichlorovinyl dimethyl phosphate (084001), o-isopropylphenyl methylcarbamate (047802), petroleum distillate (063503) plus xylene (086802)
011715-00105**
**undergoing cancellation process

2,2-dichlorovinyl dimethyl phosphate (084001). ronnel (058301), petroleum distillate (063503) plus xylene (086802)
000499-00218 001187-00080 009444-00047

&210.0019 10% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00265

&220.0019 20% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
001187-00067 001187-00110 001187-00115 006959-00035
006959-00041 044215-00072

&230.0019 30% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
008421-00001**
**undergoing cancellation process

&240.0019 40% pressurized liquid
2,2-dichlorovinyl dimethyl phosphate (084001)
001187-00108

Listing of Registered Pesticide Products by Formulation (continued)

&010.0020 10% pressurized dust
2,2-dichlorovinyl dimethyl phosphate (084001)
000201-00133

9999999 State Label Registrations

AL Reg. No.
013283-03268

AZ Reg. No.
000201-05966 035027-06325

CA Reg. No.
000550-04777 000707-04694 000962-07465 000962-07467
000962-07468 005481-03833 005481-03836 005481-03863
005481-03868 005967-05165 005967-05166 005967-05167
010944-08659 011034-04486 011034-10097 011134-06017
011214-08133 011214-08135 011604-09464

CO Reg. No.
008730-04620 037351-05367

FL Reg. No.
000201-05751 005302-05458 008962-08832 009782-03622
009782-03623 009782-03625 009782-10403 009782-10406
014775-08746 026885-10144 034164-09261 036866-05875
036866-05876 037347-03119

HI Reg. No.
000550-07430 006720-04731

LA Reg. No.
011746-09502

MA Reg. No.
025247-03160

MI Reg. No.
001071-06935 036265-09007

NY Reg. No.
010819-06714 010819-08978 038655-10424 038655-10458

OH Reg. No.
000850-10200 036465-09560

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Listing of Registered Pesticide Products by Formulation (continued)

TX Reg. No.

001307-09452
003286-08082
003509-05494
004651-03006
009468-04975
034149-03547
034901-03724
034901-03725
035994-06088

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Appendix A-1

Listing of Active Ingredient(s) Found in Combination with the Report Chemical

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
069167	alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (60% C14, 30% C16, 5% C12, 5% C18)	--
069104	alkyl*dimethyl ethylbenzyl ammonium chloride *alkyl (68% C12, 32% C14)	--
004001	allethrin	allethrin (allyl homolog of cinerin I)
004003	d-trans allethrin	d-trans allethrin (allyl homolog of cinerin I)
010002	beta-butoxy beta'-thiocyano diethyl ether	--
011501	2-butoxy ethanol	--
056801	carbaryl	--
059101	chlorpyrifos	--
058801	ciodrin	dimethyl phosphate of alpha-methylbenzyl 3-hydroxy-cis-crotonate
057801	diazinon (ISO)	O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate
010501	dicofol	1,1-bis(chlorophenyl)-2,2,2-trichloroethanol
035001	dimethoate	--
034101	dimethrin	--
037801	dioxathion	--
040501	essential oils	--

Appendix A-1

Listing of Active Ingredient(s) Found in Combination with the Report Chemical (continued)

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
053301	fenthion	--
034801	ferbam	--
043001	formaldehyde	--
079004	isooctyl phenoxy polyethoxy ethanol	--
009001	lindane	lindane (gamma isomer of benzene hexachloride)
057001	MGK 264	N-octyl bicycloheptenedicarboximide
047201	MGK 326	dipropyl isocinchomeronate
043302	MGK R-11	2,3:4,5-bis(2-butylene)tetrahydro-2-furaldehyde
057701	malathion	--
105401	methoprene	--
034001	methoxychlor	methoxychlor, technical
114301	2-methyl-cis-7,8-epoxy octadecane	--
042004	methylene chloride	--
015801	mevinphos (ISO)	2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds
034401	naled	--
057101	N-octyl sulfoxide of isosafrole	--
059401	orthodichlorobenzene	--

Listing of Active Ingredient(s) Found in Combination with the Report Chemical (continued)

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
020201	ovex	--
032101	perthane	1,1-bis(ethylphenyl)-2,2-dichloroethane or diethyl diphenyl dichloroethane, and related compounds
069005	phenothrin (ISO)	(3-phenoxyphenyl)-methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropane-carboxylate
067501	piperonyl butoxide	piperonyl butoxide, technical
047802	propoxur (ISO)	o-isopropoxyphenyl methylcarbamate
069001	pyrethrins	--
097801	resmethrin	--
058301	ronnel	ronnel (O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate
011901	stabilene	butoxypolypropylene glycol
078501	tetrachloroethylene	--
083701	tetrachlorvinphos (ISO)	2-chloro-1-(2,4,5-trichlorophenyl)-vinyl dimethyl phosphate
010101	beta-thiocyanoethyl esters of mixed fatty acids of C10 to C18	--
080501	toxaphene	--

2,2-DICHLOROVINYL DIMETHYL PHOSPHATE

Appendix A-1

Listing of Active Ingredient(s) Found in Combination with the Report Chemical (continued)

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
057901	trichlorfon (ISO)	dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate
081201	trichloroethane	1,1,1-trichloroethane
103201	(Z)-9-tricosene	--

-- Use Common Name

IV. BIBLIOGRAPHY APPENDICES

BIBGUIDE-1

GUIDE TO USE OF THIS BIBLIOGRAPHY

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

BIBGUIDE-2

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

(1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

(2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

(3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

(4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

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MRID	CITATION
00005467	Gaines, T.B. (1960) The acute toxicity of pesticides to rats. Toxicology and Applied Pharmacology 2(1):88-99. (Also in unpublished submission received Feb 14, 1961 under PP0299; submitted by Chemagro Corp., Kansas City, Mo.; CDL:090320-Q)
00013545	Arthur, B.W.; Casida, J.E. (1957) Metabolism and selectivity of O, O-Dimethyl 2,2,2-trichloro-1-hydroxyethyl phosphonate and its acetyl and vinyl derivatives. Journal of Agricultural and Food Chemistry 5(3):186-191. (Also in unpublished submission received Apr 16, 1965 under 5H1748; submitted by Shell Chemical Co., Washington, D.C.; CDL:22161-C)
00013546	Casida, J.E.; McBride, L.; Niedermeier, R.P. (1962) Metabolism of 2,2-Dichlorovinyl dimethyl phosphate in relation to residues in milk and mammalian tissues. Journal of Agricultural and Food Chemistry 10(5):370-377. (Also in unpublished submission received Apr 16, 1965 under 5H1748; submitted by Shell Chemical Co., Washington, D.C.; CDL:221616-D)
00013550	Hine Laboratories, Incorporated (1962) 90-Day Chronic Toxicity Studies of Vapona Insecticide for Dogs: Report No. 1. (Unpublished study received Apr 16, 1965 under 5H1748; submitted by Shell Chemical Co., Washington, D.C.; CDL:221616-H)
00022923	Hill, E.F.; Health, R.G.; Spann, J.W.; et al. (1975) Lethal Dietary Toxicities of Environmental Pollutants to Birds: Special Scientific Report--Wildlife No. 191. (U.S. Dept. of the Interior, Fish and Wildlife Service, Patuxent Wildlife Research Center; unpublished report)
00024704	Shirasu, Y., Moriya, M., Kato, K.; et al. (1976) Mutagenicity screening of pesticides in the microbial system. Mutation Research 10(?):19-30. (Also in unpublished submission received Jun 2, 1977 under 100-529; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:230303-C)
00036935	Atkins, E.L.; Greywood, E.A.; Macdonald, R.L. (1975) Toxicity of Pesticides and Other Agricultural Chemicals to Honey Bees: Laboratory Studies. By University of California, Dept. of Entomology. ?: UC, Cooperative Extension. (Leaflet 2287; published study.)
00042702	Shell Development Company (1964) Determination of Vapona Insecticide in Crops and Animal Products: Enzyme Inhibition-Spectrophotometric Method. Method dated Jun 18, 1964. (Unpublished study received Jun 18, 1964 under unknown admin. no.; CDL: 108831-A)

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00042706	Kiigemagi, U.; Terriere, L.C. (1964) A Tentative Method for the Determination of DDVP (Vapona): Residues in Certain Vegetables. Method dated Jun 24, 1964. (Unpublished study received Jun 24, 1964 under unknown admin. no.; prepared by Oregon State Univ., Dept. of Agricultural Chemistry, submitted by ?; CDL:108825-A)
00046435	Shirasu, Y.; Moriya, M.; Kato, K.; et al. (1976) Mutagenicity screening of pesticides in the microbial system. Mutation Research 40(?):19-30. (Also in unpublished submission received May 28, 1980 under 1023-57; submitted by Upjohn Co., Kalamazoo, Mich.; CDL:242524-A)
00047472	Laboratoire de Recherche et D'Applications (1969) Residues in Unwrapped Foodstuffs Purchased from Shops. (Unpublished study received May 1, 1970 under 0H2477; submitted by Shell Chemical Co., Washington, D.C.; CDL:221670-B)
00049086	Shell Chemical Company (1971) Determination of Vapona Insecticide in Agricultural Products. Analytical method PMS-G-913/69 dated Jul 1, 1969. (Unpublished study received on unknown date under 201-341; CDL:222759-B)
00049087	Shell Development Company (1969) Residue Determination of Dichlorvos Analogs in Animal Feed, Blood, Body Tissue and Excrement, with Specific Reference to Dichlorvos and Its Methyl, Octyl and Dioctyl Analogs. Analytical method MMS-R-201 dated Aug 1969. (Unpublished study received on unknown date under 201-341; CDL:222759-C)
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MRID	CITATION
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00056596	U.S. Agricultural Marketing Service, Stored-Product Insects Branch (1963) DDVP Residues on Packaged Commodities after Exposure to a Relatively Constant Vapor Concentration Applied with DDVP-Impregnated Granules: Project BS 1-51:62. (Unpublished study; CDL:221615-AB)
00059398	Jolley, W.P.; Stemmer, K.L.; Ushry, W. (1967) The Effects Exerted upon Beagle Dogs, during a Period of Two Years, by the Introduction of Vapona Insecticide into Their Daily Diets. (Unpublished study received on unknown date under unknown admin. no.; prepared by Univ. of Cincinnati, Dept. of Environmental Health, Kettering Laboratory, submitted by Shell Chemical Co., Washington, D.C.; CDL:120596-R)
00060469	U.S. Department of Agriculture (1968) Results of Research on Residues of Dichlorvos in Milk and Body Tissues of Dairy Cows Treated for Fly Control. (Agricultural Research Service, Entomology Research Div., Texas Laboratory; unpublished study; CDL:221669-H)
00060470	Shell Development Company (1964) Determination of DDVP in Animal Tissue: Enzyme Inhibition-Spectrophotometric Method. Method MMS-30A/64 dated Jul 1964. (Unpublished study received Nov 6, 1969 under 0H2477; CDL:221669-J)
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MRID	CITATION
00076809	Shell Chemical Company (1980) Summary of Residue Data for Dichlorvos in or on Figs. (Compilation; unpublished study, including published data, received May 8, 1981 under 201-125; CDL: 070073-A)
00076822	Schafer, J.H. (1976) Eye Irritation Study in Rabbits Using Technical DDVP. (Unpublished study received Jun 16, 1981 under 42118-23; prepared by Elars Bioresearch Laboratories, submitted by Colorado Organic Chemical Co., Inc., Commerce City, Colo.; CDL:245298-I)
00085407	Chen, Y.S.; Tucker, B.V. (1981) Ethyl-1-14C naled Plant Metabolism: File No. 721.14. (Unpublished study received Oct 14, 1981 under 239-1633; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:246151-A)
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00115945	Shell Chemical Co. (1973) Residue Information in Support of Vapona Insecticide Residual Wall Spray Emulsifiable. (Compilation; unpublished study received on unknown date under 201-EX-45; CDL:238131-A)
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00117257	Shell Chemical Co. (1971) Analysis of Recovery Samples. (Unpublished study received on unknown date under unknown admin. no.; CDL:117545-A)
00117261	Block, A.; Panos, A.; Sheridan, J. (1961) Progress Report I on the Digestion of Dimethyl Dichloro Vinyl Phosphate in Cows: Project No. 9304-80-2. (Unpublished study received Sep 6, 1961 under 5609-7; prepared by Evans Research and Development Corp., submitted by Norda Essential Oil & Chemical Co., New York, NY; CDL:120055-A)

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MRID	CITATION
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00117690	Shell Chemical Co. (1963) Determination of Vapona Insecticide Residues in Mushrooms, Banana Peel and Pulp. (Compilation; unpublished study received May 26, 1964 under 201-136; CDL: 120071-A)
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V. FORMS APPENDICES

OMB Approval No. 2070-0057
Expires 11/30/89

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	EPA REGISTRATION NO.
PRODUCT NAME	
APPLICANT'S NAME	DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1

OMB Approval No. 2070-0057
Expires 11/30/89

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6

PRODUCT SPECIFIC DATA REPORT

EPA Reg. No.________________ Date ________________

Guidance Document for ________________________

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	
§158.120 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
§158.135 TOXICOLOGY					
81-1	Acute oral toxicity, rat				
81-2	Acute dermal toxicity, rabbit				
81-3	Acute inhalation, toxicity, rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

OMB Approval No. 2070-0057
Expiration Date 11/30/89

GENERIC DATA EXEMPTION STATEMENT

EPA Product Registration Number: ______________

Registrant's Name and Address: ______________________

____

As an authorized representative of the registrant of the product identified above, I certify that:

(1) I have read and am familiar with the terms of the Notice from EPA dated __________ concerning a requirement for submission of "generic" data on the active ingredient ____________ named under FIFRA Section 3(c)(2)(B).

(2) My firm requests that EPA not suspend the registration of our product, despite our lack of intent to submit the generic data in question, on the grounds that the product contains the active ingredient solely as the result of the incorporation into the product of another product which contains that active ingredient, which is registered under FIFRA Section 3, and which is purchased by us from another producer.

(3) An accurate Confidental Statement of Formula(CSF) for the above-identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the subject active ingredient in my firm's product, or

The CSF dated ________ on file with EPA is complete, current and accurate and contains the information requested on the current CSF Form No. 8570-4. The registered source(s) of the above named active ingredient in my product(s) is/are ____________________ and their registration number(s) is/are ______________.

My firm will apply for an amendment to the registration prior to changing the source of the active ingredient in our product.

(4) I understand, and agree on behalf of my firm, that if at any time any portion of this Statement is no longer true, or if my firm fails to comply with the undertakings made in this Statement, my firm's product's registration may be suspended under FIFRA Section 3(c)(2)(B).

(5) I further understand that if my firm is granted a generic data exemption for the product, my firm relies on the efforts of other persons to provide the Agency with the required generic data. If the registrant(s) who have committed to generate and submit the required data fail to take appropriate steps to meet requirements or are no longer in compliance with this Notice's data requirements, the Agency will consider that both they and my firm are not in compliance and will normally initiate proceedings to suspend the registrations of my firm's product(s) and their product(s), unless my firm commits to submit and submits the required data in the specified time frame. I understand that, in such cases, the Agency generally will not grant a time extension for submitting the data.

Registrant's authorized representative: ______________________________
(Signature)

Dated: ________________ ______________________________
(Typed)

EPA Form 8570-27

2070-0060

Exp. 9/30/87

CERTIFICATION WITH RESPECT TO CITATION OF DATA

EPA File Symbol/Reg. No. ______________ Date of application ____________

Name of Product ____

Applicant's Name and Address ______________________________________

____

____

____

1. This application is supported by all data submitted or cited in the application. In addition, if cite-all options are indicated, this application is supported by all data in the Agency's files that concern the properties or effects of this product or of any other product that is identical or substantially similar, and that is one of the types of data that would be required to be submitted if this application sought the initial registration of a product of identical or similar composition and intended uses under the data requirements in effect on the date of approval of this application.

2. I certify that, for each study cited in support of this application for registration that is an exclusive use study, I have obtained the written permission of the original data submitter to cite that study.

3. I certify that, for each study cited in support of this application for registration that is not an exclusive use study:

I have obtained the written permission of the original data submitter to cite that study; or

I have notified in writing the companies who have submitted data I have cited to support this application and have offered to: (a) Pay compensation for those data in accordance with section 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act; and (b) Commence negotiations to determine which data are subject to the compensation requirement of FIFRA and the amount and terms of compensation due, if any. The companies I have notified are: (Check one)

☐ All companies listed on the Pesticide Data Submitters List for all active ingredients contained in my product (Cite-all method or cite-all option under Selective Method). (Also sign the General Offer to Pay Statement below.)

☐ Those companies who have submitted the studies which I have cited (Selective method)

Date ______________ Signature ____________________________

Title ____________________________

General Offer to Pay: I hereby offer and agree to pay compensation to other persons, with regard to the approval of this application, to the extent required by FIFRA sec. 3(c)(1)(D) and 3(c)(2)(D).

Date ____________ Signature ____________________________

Title ____________________________

EPA Form (April 1985)

*U.S. GOVERNMENT PRINTING OFFICE:1987-516-002:80511